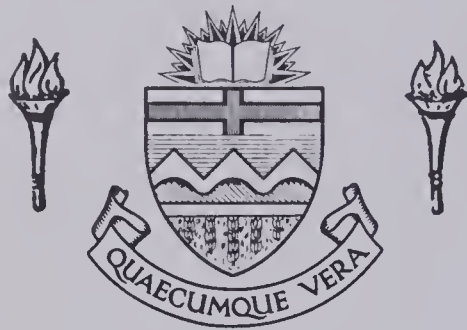


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THE ALCHEMISTS AT FINNEGANS WAKE

by



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A THESIS

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "The Alchemists at Finnegans Wake", submitted by James Francis Gilhooly in partial fulfilment of the requirements for the degree of Master of Arts.

ABSTRACT

From the nonchalant contacts of his youth with the Dublin hermetists to his middle-aged superstitions regarding thunder, rings, and dreams, James Joyce found himself in contact with the occult and the mystical, with what lies beneath the skin of things as the secret spring of their power. Critical neglect in the past has allowed this aspect of Joyce's work to pass virtually unnoticed; the present study will have served its purpose if such an approach is pursued hereafter. Apart from this, its ambitions are humble; certain of the alchemists and various personages connected with them appear in Finnegans Wake, and I have attempted to tabulate them here. More important is the firm ground laid for a complete study of the alchemical process in Finnegans Wake, and of the occult in general.

The Introduction serves as a guide to my intentions and critical attitude, as well as containing a sample exegesis of a short but important alchemical passage; the length of even this simple task, along with a realization that hundreds of such passages exist, makes the scope of a complete alchemical study apparent.

The main text, "The Alchemists at Finnegans Wake", is an alphabetical list of the twenty-odd practitioners of the

Spagyric Art to appear. Under each heading is a list of all references to the personage in Finnegans Wake, an alchemical explication of particularly relevant passages, a resumé of any pertinent biographical and theoretical details, and a statement of any understanding thereby cast upon the text.

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TABLE OF CONTENTS

ABSTRACT	v
ACKNOWLEDGEMENTS	vii
CHAPTER ONE: Introduction	1
CHAPTER TWO: "The Alchemists at <u>Finnegans Wake</u>	14
Abraham the Jew	14
Agricola	16
Henry Cornelius Agrippa von Nettesheim	18
Thomas Aquinas	28
Arabic Alchemists	36
Basil Valentine	46
Charles Baudelaire	47
Giordano Bruno	48
Cleopatra	49
Kenelm Digby	52
Galen of Pergamon	54
Hermes Trismegistos	61
Ben Jonson's <u>The Alchemist</u>	69
Raymon Lull	81
Maria the Jewess	83
Isaac Newton	86
Paracelsus (Theophrastus Bombast von Hohenheim).	87
Plato	92
Giambattista Della Porta	93
William Butler Yeats	94
Zosimos	97
FOOTNOTES	108
BIBLIOGRAPHY	127

CHAPTER ONE: INTRODUCTION

Stephen Dedalus, merciless to the verge of razored masochism, poised on the diamond-edged fulcrum of peripatetic actuality, again and again dragging back the stubborn-heeled aberrational drift of his fantasy to that which is, names God a cry in the street. From the dwarfish spinster, Maria, her witch's hooknose drooping sadly over her lips, to the sodden HCE stentoriously snoring, asprawl in pools of stale beer and sawdust, the Joycean continuum is firmly anchored in that sharpest encroachment of the real upon human perception, leaden triviality and the ragtags of mundane paraphernalia.

But Joyce's one good eye was never a mere pin-hole camera; more often than not, the cry in the street is one of pain and defeat. The exile's embryonic delight lay in the application of just sufficient pressure to the spinal cords of his enemy-victims, the untermensch of his race, so that they could be heard precipitating into the shattering snap of paralytic enlightenment; one thinks of Dali's "Masquerading Character in the Act of Pinning Up a Butterfly". Even so, the claritates of Dubliners are equally a function of structural effect, and as Joyce reached for the tantalizingly cosmic, as he continued stooping to drink the dust of the streets, the iron mask softened to a smile of quicksilver, and a cry in the

street became God, withering flesh became crystalline deus:

this Esuan Menschavik and the first till last alshemist wrote over every square inch of the only foolscap available, his own body, till by its corrosive sublimation one continuous present tense integument slowly unfolded all marryvoising moodmoulded cyclewheeling history (thereby, he said, reflecting from his own individual person life unlivable, transaccidentated through the slow fires of consciousness into a dual chaos, perilous, potent, common to allflesh, human only, mortal) but with each word that would not pass away the squidsself which he had squirtscreened from the crystalline world waned chagreenold and doriangrayer in its dudhud. (185.34-186.08)¹

Oscar Wilde calls imagination "the faculty by which, and by which alone, one can understand others in their real as in their ideal relations"²; whatever the shift in his polemics, Joyce never abandoned the search for the jewel in the dust, for the epiphany of the dross, for the divine hidden in matter.

The concept of the precious concealed in the vile is central to Western alchemy, both physical and philosophical. 'Wisdom', a construct derived from the Gnostic Sophia, is the soul of the dark earth, of the prima materia; alchemy would rescue the hidden, feminine aspects of God from imprisonment in matter and reunite them with the manifest, masculine deity.³ The initial matter of the Alchemical Opus, usually known as the prima materia, is as cheap as dirt and can be obtained everywhere; it is "saturnine", "the most despised and rejected thing", "thrown out in the street", "cast on the dunghill", and "found in filth".⁴ The alchemist George Ripley similarly

remarks of the Stone, always regarded as the product, but often mystically linked with its own genesis, "every man has it, it is in every place, in you, in me, in everything, in time and space. It offers itself in lowly form. From it there springs our eternal water."⁵ The Turba philosophorum construes it as "a thing . . . which is found everywhere, which is a stone and no stone, contemptible and precious, hidden, concealed, and yet known to everyone."⁶ Simple lowliness is expanded into the well-known paradox that the Stone is utterly worthless and yet of a value which exceeds all.⁷ Commenting upon Psalm 112:7, "He lifts up the poor man out of the dunghill", Honorius of Autun proclaims:

That which is rejected by men, is pleasant to our Lord . . . Behold, thus is the precious stone that lies hidden in the dunghill lifted out of the cloaca of the stench of the world and set in the kingly diadem, which sparkles with fiery gems, in a shining place. 8

Joyce enlists the symbolism and dynamic process of alchemy in a most pervasive manner in the construction of Finnegans Wake. A leisurely reading of the text would immediately focus upon the configuration Shem, known as the "alshemist" (185.27), upon the reference to the Emerald Tables of Hermes (263.22), and upon the Tria Prima of Paracelsus, linked to HCE, who is "mehrkurios than saltz of sulphur" (261.25-.26), as prominent examples of alchemic metaphor in the Wake, but a persistent probing of the text reveals that Joyce moved far beyond these surface identifications, these glaring signposts,

and threaded the entire Alchemical Opus into his master work, to such an extent that it must be regarded as a primary stratum of the text. Indeed, Joyce's title Work in Progress is sufficient to suggest the emphasis he laid upon alchemy, which is always known as the Opus, or Work, and which is nothing if it is not dynamic.

A critical amplification of one out of over a hundred alchemical passages in Finnegans Wake will serve to demonstrate some of the implications of Joyce's use of the science, hitherto a blind spot in the critical canon. In the passage

A bone, a pebble, a ramskin; chip them, chap them, cut them up allways; leave them to terracook in the muttheringpot: and Gutenmorg with his cromagnon charter, tintingfast and great primer must once for omniboss step rubrickredd out of the wordpress else is there no virtue more in alcohoran (20.05-.10),

Joyce amalgamates and compacts the various strands of alchemy, printing, the Renaissance, the masculine-feminine ratio, and human evolution, an impressive instance of the central role he assigns to the Spagyric Art. Here, we see the masculine trinity united and risen as the New Man, in the guise of print technology; the demiurge of the process, however, is ALP, the feminine, employing the alchemical arts.

The triplet, "bone", "pebble", and "ramskin", must be understood as the two sons and the father, united in HCE, the apotheosis of the masculine. Bone is Shaun, who "points the deathbone" (193.29); it is not alchemical, but this observation

would appear to be in keeping with Shaun's complete dissociation from the Art: he is the result of the process, as a complete exegesis would show, and unaware of his genesis, by the principle of "viability of vicinals" (81.01). Shem is the agent of the transformation, the master of disguise, here employing "ramskin", Jacob's gambit, and the master of literary fake, ramskin as parchment. The word "pebble" in English connotes both stone and a leather surface, thus bridging here the fraternal opposites. It coincides with the Philosopher's Stone, the central truth, which is midmost, the mediator uniting opposites⁹; "for in the Stone are body, soul and spirit, and yet it is one stone".¹⁰ As the unfocused image of an unconscious force of widespread, or archetypal occurrence, the Stone is always paradoxical: it is, as well, the containing vessel, implying, psychologically, that the self contains itself; it is related to the feminine four, but as Zosimos says, "it is triune and one"¹¹; the idea of both masculine and feminine principles entering into the generation of the Philosopher's Stone is widely disseminated in alchemical literature.¹² This latter coniunctio does not alter the observation of fraternal union, for it is axiomatic in the Wake that Shaun is the son of HCE, while Shem is the son of ALP (420.17). Most commonly, the alchemical process is likened to a death and a resurrection of the Stone; the latter situation, often symbolized by a crown¹³,

aligns alchemy with the central Western religious and philosophical tradition, and with the main movement of Finnegans Wake.

The genuineness and incorruptibility of the Stone must always be tested by torture, or, more commonly, by fire.¹⁴ The phrase "chip them, chap them, cut them up allways" is precisely the analogue of this test and of the initial stage of the Work, mortificatio, often signalled by dismemberment with a sword;¹⁵ this stage, a separation of fixed and volatile, body and spirit, corrupt and incorruptible, precipitates the remote materials of the process into the nigredo, or initial chaos, in which no form exists. After a purification into whiteness, the so-called albedo, the opposites are rejoined, which leads, with much variation in detail, to the rubedo, or stage of perfection, the goal of the Work.

ALP is named as First Cause of the transformation in "leave them to terracook in the muttheringpot". The amalgam "muttheringpot" contains the Latin 'mutare' ('to change'), 'to mutter speech or magical incantation', 'mother', and 'mutton'; the latter links this series to the digestion-cannibalism motifs. The 'pot' here is the mysterious vessel of alchemy, Zosimos' krater, to name an early example, a wondrous font or piscina in which the substance is immersed and transformed. The so-called vas Hermetis of later alchemy is typified by retorts or melting furnaces containing the remote materials to be

altered, but it is no mere apparatus:

For the alchemists the vessel is something truly marvellous: a vas mirabile. Maria Prophetissa says that the whole secret lies in knowing about the Hermetic vessel. 'Unum est vas' (The vessel is one) is emphasized again and again. It must be completely round, in imitation of the spherical cosmos, so that the influence of the stars may contribute to the success of the operation. It is a kind of matrix or uterus from which the filius philosophorum, the miraculous stone is to be born. Hence it is required that the vessel be not only round but egg-shaped. One naturally thinks of this vessel as a sort of retort or flask; but one soon learns that this is an inadequate conception since the vessel is more a mystical idea, a true symbol like all the main ideas of alchemy.¹⁷

Most commentators on Joyce note the difficulty of keeping to a central thread of critical argument. Here let us divert briefly to the observation that ALP is presented in other contexts as the possessor of the vessel, of the "nabsack" (11.19); she is bidden to "prattle a lude all her own" (337.09), to incant via the 'aludel', a common technical term for the vessel. This container was hermetically sealed during the Great Work, a phenomenon highly suggestive of "Doublends Jined (may his forehead be darkened with mud who would sunder!" (20.16-.17), and of other seals and prohibitions throughout the Wake; furthermore, the vessel in this aspect was sometimes known as the House of Glass, or the Prison of the King,¹⁸ and in Finnegans Wake, this vessel is none other than the tomb of HCE, who, as Jarl van Hoothe, "had his burnt head high up in his lamphouse, laying cold hands on himself" (21.10-.11).

The composite "terracoook" suggests both 'terra cotta', a red clay employed in pottery, and 'cooking in the earth'. From the times of early alchemy, the spirit hidden in matter was released by dismemberment with a sword, by dissolution or separation, or by cooking:

Spirit in alchemy almost invariably has a relation to water or to the radical moisture, a fact that may be explained simply by the empirical nature of the oldest form of 'chemistry', namely the art of cooking. The steam arising from boiling water conveys the first vivid impression of 'metasomatosi's', the transformation of the corporeal into the incorporeal, into spirit or pneuma.¹⁹

'Cooking in the earth' doubles the alchemic linkage. It was widely held in the Middle Ages that metals were formed in the earth by planetary influence.²⁰ According to Basil Valentine, the earth is not dead, but inhabited by a spirit; all creation draws its strength from this spirit, which is nourished by the stars, and which in turn nourishes all, hatching minerals in its womb as a mother her unborn child.²¹ Earth is regarded as the irreducible substrate of physical and psychic facts which all have from birth and out of which individuation is attained.²² In Calid, the lapis as a foetus is nourished by varying triads of elements, but earth is always missing from these; psychologically, this absence would imply that the fourth mental function is unconscious, that, specifically, the relationship to materiality and the concrete world is lacking.²³ ALP, the force of

somatic renewal in sleep, reposes in the deepest levels of the unconscious mind, where psyche fades into body.

"Gutenmorg" is the product of this labor, unconscious of its origins, and perhaps projected into another somatic metaphor, since Latin 'guttur' is 'throat', while Old English 'guttas' refers to 'bowels', but most certainly involving a masculine entity, since 'morganatic' is a legal term referring to male dominance in the situation in which a man owes his wife only the gift conferred on the morning after physical consummation; Gutenberg and the printing press are included, thus allying print technology with the resurrection, or the 'Good Morning', of male consciousness. The neologism "cromagnon charter" unites the rights of the private individual established by the Magna Charta with the 'new race' of man born of technology; in addition, we must read Irish 'cro' ('blood' or 'death') plus 'magnus', as well as Welsh 'crom' ('crooked') plus 'agnomen', a Roman's fourth name (the latter implies once again the feminine as the fourth, missing element of the godhead), or Greek 'chromos' ('color'), Greek 'gnomon' ('maxim'), and Paracelsus' term for the kobold, or subterranean dwarf.

The redness in "cromagnon", "rubrickredd", and "terra-cook" is the red that is invariably the color of the Philosopher's Stone:

The emphasis attached to the production of colours in the preparation of the Stone was in keeping with the

conception of its function as a dyeing or 'tinging' agent for the imperfect metals: because of this belief, the Stone was often known as the Red Tincture.²⁴

Red is the color of perfection and incorruptibility in alchemy.²⁵

The word "tintingfast", then, refers to that primary quality of the Stone, its ability to transmute base metals into gold, as a tincture or dye; Senior calls the feminine Wisdom the tincture which changes things from potential to actual.²⁶ Joyce's "primer", in its English painting usage, certainly reinforces this reading; however, "primer" may equally include the prima materia, the mysterious and all-inclusive feminine chaos. If Joyce's typology be true, the Rough Beast born here is both masculine and feminine, but this apparent contradiction is strictly in keeping with the paradoxes of alchemy, which hold that the Stone is hermaphroditic, in token of its completion. Note that the resurrection again involves printing, since a 'primer' is a schoolbook or prayerbook, as well as a variety of printing type.

Besides involving a double reference to the rubedo of alchemic perfection, and to 'rubric', which is specifically a red book title in a divine service or in a calendar of saints, "rubrickredd" suggests 'oil of bricks', a medieval prototype of the production of acids, regarded at the time of its discovery as the perfect magistery or solvent.²⁷ The word "alcohoran" underscores this reading, since it contains 'Koran'; the Arabic al-

chemists (q.v.) were particularly adept at distillation and at the production of solvents, and Islam was responsible for the transmission of classical learning to the West, without which, one presumes, the Renaissance would have been a still-birth. This "alcohoran" is also 'alkahest', Paracelsus' name for that much-maligned universal solvent,²⁸ or 'Alcahat', another of the endless synonyms for the Stone,²⁹ but its primary overtone is simply 'alcohol', a Shemish signature in the Wake, and which, when discovered chemically in the twelfth century, revolutionized alchemy.³⁰

References to printing are perceptible in "Gutenmorg", "charter", "primer", "rubrickredd", and "wordpress". It appears that the longhand writing of alchemical manuscripts persisted long after the invention of printing, principally because of the importance of color in pictorial representation.³¹ The decline of alchemy in the fifteenth century,³² then, seems very likely to have been a result of that importance of color, lost in the flood of texts printed in black and white. Joyce may have the riddle "What's white and black and red (read) all over" in mind in the course of his extended play on print and alchemy, for nigredo (black), albedo (white), and rubedo (red) are the three stages of the alchemical transformation. His suggestion seems to be that the invention of printing meant the death of imagination in the West, of the color that is alchemy, even though

printing and modern technology are the offspring of alchemic thinking, children oblivious of their genealogy; print technology is excessively masculine, black and white, conscious. By cutting the human race away from the feminine roots of the past, of the emotions, and of the unconscious, abstract thought makes inevitable the fall of man.

Although the "Gutenmorg" passage is central to an unravelling of alchemy in Finnegans Wake, it is only one example of what I have come to perceive as a widespread metaphor for character transformation and historical evolution. What follows in this paper is only the first step in an understanding of Joyce's relation to the Spagyric Art.

The central text is structured simply as an alphabetical ordering of the alchemists at Finnegans Wake; within each of these divisions is a commentary on any relevant biography and theory, on the appearances of the alchemist in the Wake, and on the insight thus provided towards the total text. I address myself primarily to the serious reader of Finnegans Wake, to whom the 'catalogue' organization is most useful; this technique is the basic approach of many critics, including Glasheen, Hart, Atherton, Boldereff, Bonheim, Hodgart and Worthington, and Christiani. I make many assumptions of familiarity, without attempting to pursue them, so that the significance of many simple statements depends upon what I would consider automatic connections to the Wake, and the stranger to Joyce may find

much of my collection trivial, a simple compendium. While not explicating the total role of alchemy, a very large theme, the commentary is woven with many digressions into strictly alchemical metaphor. As for the alchemists, I have, I believe, included all of them here. In some sense, my work is an extension of Atherton's The Books at the Wake, a most admirable and ambitious criticism, exhibiting a very wide acquaintance with world literature, but unfortunately disappointing with respect to minute identification; without a molecular understanding, knowledge of the Wake is inconceivable, for Joyce usually forges the smallest bits of perceivable thought and word, in his design to "split the etym". I have attempted to fill some of these gaps for alchemy; however, to speak of specific alchemical texts is perhaps impossible, since the "muddest thick ever" of the alchemical canon is extremely large and confusing, with countless lost texts, forgeries, and unknown authorships, complicated by the absence of "copriright".

CHAPTER TWO

THE ALCHEMISTS AT FINNEGANS WAKE

Abraham the Jew

The seventeenth-century text known as Uraltes chymisches Werk was purportedly the secret book of Abraham le Juif, or Abraham Eleazar, as he was named in that century; Jung¹ calls it a forgery, but this 'impediment' would make it all the more important in Joyce's eyes, concerned as he was with the counterfeit. Abraham is alluded to in "sucks life's eleaxir from the pettipickles of the Jewess and ruoulls in sulks if any popeling runs down the Huguenots" (133.19-.20). The "Jewess" here is Maria the Jewess (q.v.), while "eleaxir" is a compound of 'Eleazar' and 'elixir', one term for the alchemist's goal, specifically in the form of the water of life. Abraham, like many alchemists, is a most shadowy, but influential personage; "the emblems occurring in the figures of Abraham pervaded the later alchemical literature, and they were repeated age after age with surprisingly little variation."² Along with Wolfe and Montcalm, Abraham is

included in minor fashion in:

Blueblitzbolted from there, knowing the hingeworms of
the hallmirks of habitationlesness, buried burrowing in
Gehinnon
The other spring offensive on the heights of Abraham may
have come about all quite by accidence, Foughtarundser .
. . had not been three monads in his watery grave . . .
when portrifaction, dreyfussed as ever, began to ramp,
ramp, ramp, the boys are parching. (78.07-.09; 78.15-.22)

The alchemical context is supplied by "portrifaction", or 'putre-
faction', the initial death of materials to the prima materia or
nigredo. The "hingeworms", or ouroboros, appears to find corro-
boration in Abraham's spiritus Pythonis³ and in his maxim
"'Python is the life of all things'."⁴ A final appearance in
the Burrus-Caseous passage (Question 11), one of the major al-
chemical sections, is possible:

This thing, Mister Abby, is nefand. (And, taking off
soutstuffs and alkalike matters, I hope we can kill time
to reach the salt because there's some forceglass neutric
assets bittering in the soldpewter for you to plump your
pottage in). . . Twelve tabular times till now have I
edicted it . . . (Abraham Tripier. (167.18-.26)

"Twelve tabular times" is The Law of the Twelve Tables, but also,
I believe, the Smaragdine Tablets of Hermes, the alchemist's
sacred text, which also contains twelve precepts (q.v. Hermes);
"Tripier" has overtones of the well-known 'Thrice-Great' desig-
nation.

Agricola (Georg Bauer, 1494-1555)

Agricola, classicist, teacher, metallurgist, and physician to the miners of Joachimstal, is regarded by one historian as having effected, with Paracelsus, the modern revolution in science.⁶ Until the sixteenth century, technical treatises on chemistry and mining production were non-existent; during that explosive century, a flood of description on glassmaking, fireworks, and pharmacy occurred, and the finest example of this literature is Agricola's De re metallica (1556), which treats all aspects of mining and metallurgy, marks the beginnings of chemical analysis with ore assays and delicate equipment, and signals large-scale chemical manufacture of sulphur, bitumen, saltpetre, salt, nitric acid, vitriol, and the like.

Joyce includes Agricola in a sympathetic group to whom Shem relates his grievances:

admitted to that tamileasy samtalaisy conclamazzione (since, still and before physicians, lawyers merchant, belfry pollititians, agricolous manufraudurers, sacrestanes of the Pure River Society, philanthropicks lodging on as many boards round the panesthetic at the same time as possible) (173.14-.19).

Agricola is a 'fraud' in Joyce's eyes, perhaps because of the polluting effects of modern science, or perhaps because of a darker side to Agricola's personality. His work De animantibus subterraneis (1549) is filled with what is sometimes called superstition, with flies which breed and flourish in smelting furnaces,

with fabled kobolds, some of which mimic men, while others kill with their breath, and with salamanders which inhabit flame.⁷

At the same time, Agricola criticizes alchemy, as in the preface to De re metallica. The pun "manufraudurers" contains Albrecht Dürer, the avowed master of woodcut; De re metallica is filled with illustrative woodcuts, although none are by Dürer. The reference to this artisan-painter forms a part of Joyce's commentary on the printing press and on the decline of alchemy and the colorful poetic imagination (q.v. 20.05); the most thorough Arthur Hind observes that

in the truest quality of book illustration, i.e. in the perfect balance between woodcut illustration and the printed type in making a beautiful page, the best period in Germany was undoubtedly between 1470 and 1500. The woodcuts themselves may have become greater works of art in Dürer's hands, and achievements of greater accomplishment or interest as developed by Dürer's followers, but with the increase in the commerce of books, the printers became careless of fine book production.⁸

Furthermore, the 'invention' of printing must have depended on the development of metallurgy; the Chinese had stumbled upon the press concept, but were unable to capitalize upon it because of the unmanageable nature of wood. Metallurgy was closely akin to alchemy; in fact, it derives from it, becoming an independent field of investigation only with the advent of Agricola.⁹

Henry Cornelius Agrippa von Nettesheim (1486-1535)

Agrippa's initials are almost HCE; this observation alone establishes his importance for Joyce. Born in Cologne, he became a professor of Hebrew and a physician, but because of his opposition to the inhumane treatment of the insane, he was forced to flee Metz and the Inquisition, becoming a "vagabond scholar"¹⁰ and "arch-magus of the age".¹¹ He dabbled in alchemy and the occult, along with Pico della Mirandola introducing the Qabbalah to the world.¹² He was responsible for the revival of neo-platonism in Renaissance Europe,¹³ adding to Plotinus the following: the true image of God is Logos; man is a microcosm, the image of nature; the soul in harmony with God, however, takes the image of God and Logos; celestial light takes invisible form in the soul, finally shining through the body like a star; there is a spiritual power in man's soul which allows power over nature, but only if employed towards the Divine Purpose.¹⁴

Agrippa appears frequently in Finnegans Wake.¹⁵ Shem has been banished and attempts reconciliation,

in justifiable hope that, in nobiloroman review of the hugely sitisfactuary conclusium of their negotiations and the jugglemonkysh agripment deinderivative, some lotion or fomentation of poppyheads would be jennerously exhibited to the parts. (84.14-.18)

The adjective "jugglemonkysh" perhaps refers to Agrippa's mistrust of reason, to his restless and erring intellectual habits, to

the fact that his teacher, the Abbot Trithemius, was a monk, and to Agrippa's opposition to personal aggrandisement:

physicians recommend themselves by splendid costumes, rings and jewels, tedious travels, a strange country of origin and a strange religion. They are shameless in praising their medicines and cures, hang amulets and charms on the patients.¹⁶

The word "jugglemonkysh" is also, however, a composite of 'jugg', the cry of Eliot's lecherous nightingales ("nachtingale jugs", 406.24), plus 'lemon', the characteristic fruit of Shem (and also The Wasteland, line 182: "By the waters of Leman I sat down and wept"), plus 'kysh' ("Kish is for anticheirst", 308.Fl, and "So pool the begg and pass the kish for crawsake", 7.07-.08); this isomeric reading supplies the inevitable Shemish undercurrents. Besides the primary "agripment", further corroboration for Agrippa's appearance here resides in "poppyheads", for according to Agrippa's De occulta philosophorum (1532), ladanum, one of the aromatics subordinated to Venus, is Paracelsus' arcane remedy¹⁷; the Paracelsus-Agrippa connection is intimate,¹⁸ for Paracelsus was Agrippa's pupil. The reference to Jenner is possibly a comment on Shem's submission to the victory of modern science, which gained considerable momentum from the work of Agrippa and his disciple, Paracelsus, but, more likely, it includes speculation that Jenner's logic in inoculating cases of small-pox with cowpox serum in 1796 was preceded by the theories of the alchemists. In Paracelsus, a snake has its own alexipharmic,

and thus, poison defeats poison;¹⁹ in The Triumphal Chariot of Antimony, Basil Valentine states that poison attracts poison.²⁰ There is a definite relation here to Joyce's "one man's meat" motif.

Agrippa's full name appears in a passage which refers to the Letter: "Yet Una and Ita spill famine with drought and Agrippa, the propastored, spells tripulations in his threne" (94.12-.14). The death here is HCE's, resulting in a dearth of food and drink, the sovereign concerns of Shaun and Shem, respectively. The term "tripulations" appears to refer to the character Tribulation in Jonson's The Alchemist (q.v.), the leader of an Anabaptist sect banished from England to Holland; Agrippa was renounced publicly in 1532, the same year that many Anabaptists recanted their "radical and atheistic views."²¹

Agrippa's concept of the Light of Nature even allowed beasts to foretell the future;²² Paracelsus says, "it is, therefore, also to be known that the auguries of the birds are caused by these innate spirits, as when cocks foretell future weather and peacocks the death of their master."²³ HCE is dead and chemically rusted,

and she due to kid by sweetpea time, with her face to the wall, in view of the porrhous, and taking his rust in the oxsight of Iren, under all the auspices, amid the rattle of hailstorms, kalospintheochromatocreeneing with her ivyclad hood, and gripping an old pair of curling tongs, belonging to Mrs Duna O'Cannell, to blow his brains with (392.25-.30).

Here, "gripping" may be read as Agrippa, because of the connection with the Gripes, who in turn is strongly identified with Agrippa, and because of the alchemical overtones in "oxsight of Iren" and in "auspices", a word frequently associated by Joyce with Raymon Lull (q.v.). The "pair of curling tongs" are also ALP's compasses, as in "to find a locus for an alp get a howth on her bayrings as a prisme O and for a second O unbox your compasses. I cain but are you able?" (287.08-.12); that is, the compasses are Shem and Shaun.

The Gripes is an alchemist, as can be inferred from the passage 156.10-.18, in which he tries to transform himself; "Gripes" has overtones of 'griph', a riddle or enigma, while 'grip' is sometimes used in English with reference to the mode of grasping the hand by which members of a secret society recognize one another; Agrippa mentions an alchemical initiation vow, which may refer to the existence of secret societies.²⁴ Since the Mokse is the papacy, the entire dialogue between the two may be a reworking of the sixteenth-century attempt to have Hermetic doctrines established as the dominant philosophy of the Church of Rome, replacing Aristotle. The Gripes' opening remarks mockingly beg the Mokse to tell him all about 'It'; the narrative comment "Think of it! O miserendissimest retemper! A Gripes!" (154.06) begins the portrayal of Agrippa/ Gripes

as the Tempter; two lines later, there is a reference to Zosimos (q.v.), in "sissymusses and zozzymusses" (154.08). Agrippa's name is mentioned later in "Mookery mooks, it's a grippe of his gripes" (231.35-.36), which is followed closely by "Sousymost" (232.07).

At this point, it should be remarked that the name 'Agrippa' occurs frequently in history; for Joyce's poly-linguistic purposes and for his favored themes, all of these personages are ideal. Agrippa was the Roman naval commander who defeated Anthony at Actium (q.v. the Burrus-Caseous diatribe); this possibly enters into the deaths associated with Agrippa, for HCE is identified with Anthony (167.01). Agrippina was Nero's mother (Nero, 177.14 and 306.L2), Caligula's sister (Shem is Caligula at 60.26, while HCE tries to "caligulate by multiplicables the alltitude and malltitude" at 4.32), and the wife of the Emperor Claudius, whom she murdered; Agrippina was later disposed of in her turn by Nero. Herod Agrippa I and II were rulers of Galilee, near the time of Jesus, but it was rather Herod the Great who slaughtered the Innocents (for Herod and the incest theme, see 260.F1), and Herod of Antiphas who judged Christ ("herodotary Mammon Lujius", 13.20).

The 'Nettesheim' of Agrippa von Nettesheim gives rise to another series of appearances in the Wake. In his De occulta philosophorum, Agrippa discusses the luminositas sensus naturae.²⁵

In the School Lessons Chapter, one heavily studded with alchemy, "nettus" seems to include Nettesheim:

So, bagdad, after those initials falls and that primary tainture, as I know and you know yourself, begath, and the arab in the ghetto knows better, by nettus, nor anymeade or persan, (286.04-.08)

The primary tincture in alchemy is a secret of secrets (q.v. Arabic Alchemy); Shaun's marginal comment on the passage, "HYPOTHESES OF COMMONEST EXPERIENCES BEFORE APOTHEOSIS OF THE LUSTRAL PRINCIPIUM" (286.R1), suggests Agrippa's Light of Nature, and summarizes much of the larger movement of Finnegans Wake: HCE leads to ALP, especially in the null gravity centre of this Chapter, revolving about the diagram, just as an exploration of the mundane and the coarse leads to enlightenment, a concept formed by the young Joyce in the epiphany, and a principle central to alchemy, for the precious is to be found in that which men ordinarily despise. The double trinities, HCE and ALP, may be an echo of Agrippa's definition of the cosmos as threefold, elementary, sidereal, and spiritual, to which natural magic responds with physics (knowledge of things in the universe), mathematics, and theology (including magic).²⁶

Paracelsus discusses the alchemical wedding as the union of the human and the divine, exalting all things,²⁷ continuing, "And the exaltations of the nettles burn too, and the colour of the little flame sparkles and shines", in which he may be quoting or referring to Agrippa;²⁸ Jung comments, "the allusion to the

stinging nettle and the flammula is a discreet reminder that not only Mary, but Venus, too, reigns in May."²⁹ This leads to the suspicion that any of Joyce's references to 'nettle' may include Nettesheim.

The why if he but would bite and plug his baccypipes and renownse the devlins in all their pumbs and kip the streelwarkers out of the plague and nettleses milk from sickling the honeycoombe (243.20-.23)

is a promise by ALP to HCE that if he submerges the Shemish portion of his nature, she will be a devout wife. HCE must discontinue playing the Bacchus-pipes (wine and Shem), and using tobacco, one of the pernicious alkaloids to which Shem is habituated; he must keep Shem's sour milk from Shaun's honey (see 162.23); he must renounce the devil, in his "pumbs" or "plumbs", that is, lead, a Shemish characteristic (see 148.16). HCE must dissociate himself from evil. Agrippa may be viewed as the model for Faust:

He actually was accused of having clandestine relations with an enormous dog--Faustus' poodle--which accompanied him everywhere, and which, at his death, ran away 'howling as only the Devil can howl'. Like Faustus and other damned disciples of the Devil, Agrippa allegedly died with his face turned to the earth.³⁰

Keeping the steelworkers from the plague is suggestive of Agricola (q.v.) and Paracelsus.³¹ The coincidence which Joyce implies here is the fact that the nettle-tree belongs to the genus Celtis, so Shem-shaman has a nettle signature.

The following ladder-curse by Shaun is similar in its implications:

Or may the maledictions of Lousyfear fall like net-
tlerash on the white friar's father that converted
from moonshine the fostermother of the first nancy-
free that ran off after the trumpadour that mangled
Moore's melodies and so upturned the tubshead of the
stardaft journalwriter to inspire the prime finisher
to fellhim the firtree out of which Cooper Funnymore
planed the flat of the beerbarrel on which my grandy-
dad's lustiest sat his seat of unwisdom with my tante's
petted sister for the cause of his joy! Amene. (439.06-.14)

Here, Shem's "nettlerash" is definitely malignant, Shaun's conception of a suitable punishment for Joyce-Shem's literary-sexual escapades and for HCE's incest and drunkenness. The references to astronomy are characteristic and dependable signs for Shem, ALP, and the girls. To be converted from 'moonshine', I believe, means the emergence of the feminine principle from its proper sphere, the deepest layers of the unconscious, and the subsequent perversion of the Shaun-man ("when is a man not a man?"). Agrippa had an extensive theory of the signs and characters of the planets imprinted upon all existing things from birth, a theory largely derived from the Qabbalah; man, conversely, has the faculty of reapproximating himself to the stars.³² (q.v. 78.07).

Paracelsus speaks of "the characters of Venus",³³ and of spring as the season of both Mary and Venus; the Wake has "Where Lily is a Lady found the nettle rash" (306.F4), another version of Joyce's sexually ambivalent virgin, wherein Lily

is purity, but nettle is sin; this polar hypothesis is reinforced by the fact that Lull (q.v.), who defended the Immaculate Conception, is regularly associated by Joyce with the 'lil' or 'lul' etym, while 'nettle' includes the nefarious Agrippa, one of the Shemish adepts who plunges into the unconscious for wisdom, in the process sullyng the purity of analytical and moral consciousness. In Part Four, Resurrection, Shaun may return, as Kevin the pure, if certain conditions are met, among them "dropping by the way the lapful of live coals and smoothing out Nelly Nettle and her lad of mettle, full of stings, fond of stones, friend of gnewgnawn bones" (604.35-605.01), as good a summary as any of the forces in opposition to consciousness: the mother ("lapful" and "live") as motive force, the virgin as sexual bait, and metalman Shem, who thirsts for possession of stone, or Shaun, and his bones, with "gnewgnawns" echoing Answer Three to the Crab Riddle (170), "when he is a gnawstick", or 'gnostic' (q.v. Zosimos).

It has been noted by some critics, particularly by Hart, that the variable etymological motif forms much of the meta-structure of Finnegans Wake; it is not my intention in this thesis to explore this most difficult construct, but my discussion of Agrippa has been conducted as a partial demonstration of the technique. Agrippa, I believe, melts into the construct, 'net', the reverse of 'ten', or summation, and the important

'tin' ("Did ye save any tin?", 12.05), and so into the very heart of understanding. Portrait is motivated by Stephen's attempts to escape the nets of family, church, and state; in the Wake, nets are employed by the artist-figure and by the unconscious, usually to catch the ectoplasmic essence of Shaun or HCE, although the girls wear netted clothing, relating to sexual attraction and to the nettle's sexual sting. HCE is split between Shaun-Shem, day-night; in this condition, "The pigeons doves be perchin all over him oneday on Baslesbridge and the ravens duv be pitchin their dark nets after him the next night behind Koenigstein's Arbour" (136.29-.32), wherein Shem is the raven; if HCE is "netted before nibbling, can scarce turn a scale but, grossed after meals, weighs a town in himself" (132.12-.13), which seems to be that he is intangible until he Shaunily consumes himself, at which point he is impossible to catch. The Four similarly attempt to land Shaun: "And as they were spreading abroad on their octopuds their drifter nets, the chromous gleamy seiners' nets" (477.11-.12); Shaun is the Mokse, and a 'mokse' is a net, as well as a donkey, which in the Wake goes with the Four (here reminiscent of the Apostles and Christ's miracle of the bursting nets), sometimes as Shaun the demonic Christ, sometimes as Shem. Shem is apparently behind all of these attempts, in his primary alchemist's role; in bed with Izod, he wakes from a nightmare, and she chastises

him with

Don't start like that, you wretch! I thought you knew all and more, yo auctor, to explique to ones the significat of their exsystems with your nieu nivulon lead. It's only another queer fish or other in Brinbrou's damned old trouchorous river again. (148.16-.19)

Aquinas

Aquinas accepted the existence of the occult; in the Summa Theologica,³⁴ he states that "in the physical order things have certain occult forces, the reason of which man is unable to assign". Like Albertus Magnus, his master and teacher, who was involved in alchemical experimentation at the time of the first meeting with Aquinas, 1245-1250, evidenced in works like "Mineralia", "Liber aggregationis", and "De vegetabilibus et plantis", Thomas believed in the occult powers of gems. Alchemy is a "true art, but difficult on account of the occult influences of the celestial powers."³⁵ In the commentary on the third book of Aristotle's Meteorologica, in Lectio IX ad finem, there is a long discussion of metal generation from smoky and moist vapours; Aquinas accepts Aristotle's theory, adding that the celestial virtue, in the form of heat, is the active principle.

In his Scriptum in quatuor libros sententiarum magistri Petri Lombardi, Aquinas states his belief in transmutation, with the reservation that

the alchemists make something that is similar to gold so far as its outward accidents are concerned: yet they do not make real gold, for the substantial form of gold does not come into being through the heat of the fire which the alchemists use, but through the heat of the sun in a definite place where the mineral virtue operates, and therefore their gold has not a power in accordance with its appearances.³⁶

The important consideration is the operation of the occult powers; he appears to deny control of such to any but God, or the sun (and one is tempted to wonder whether he discerns any difference).

These statements are all drawn from the official Thomistic canon, but in addition to these, there is a disputed corpus of apocrypha, whence Aquinas acquired the reputation of a great magus in many quarters, like many other notable figures of the age. The title page of Michael Maier's Symbola aurea mensae duodecim nationum³⁷ has an ornamental border enclosing medallion portraits of twelve chosen alchemical heroes: Hermes the Egyptian, Maria the Jewess, Democritus the Grecian, Morienus the Roman, Avicenna the Arabian, Albertus Magnus the German, Arnoldus Villanovanus the Frenchman, Thomas Aquinas the Italian, Raymond Lully the Spaniard, Roger Bacon the Englishman, Melchior Cibien-sis the Hungarian, Michael Sendivogius the Pole.³⁸ In Stolcius'

Viridarium Chymicum (1624), there is a pictorial representation of the natural production of metals in the earth by exhalations marked sulphur and mercury; above them on the earth stands Thomas Aquinas the alchemist, engaged in attempting to duplicate the results artificially.³⁹

Many of the mystically inclined alchemists became divorced from experimental practice and used alchemy exclusively as a metaphor for the transformation of the soul; one of the most stirring and complete of these is the text Aurora Consurgens. Although it has been traditionally attributed to Aquinas, many critics, including Jung,⁴⁰ deny it as spurious. However, the modern-day editor, translator, and commentator, Marie-Louise von Franz suggests convincingly that although the text is stylistically dissimilar to Aquinas' genuine work, Aquinas suffered a mystical relapse towards the end of his life, and quoted the entire work on his deathbed to a group of obscure, but eager monks;⁴¹ von Franz notes that while the Paris, Vienna, Venice, and Rosarium editions carry no attribution, those of Bologna, Leiden, and the printer Rhenanus bear Aquinas' name.⁴² His case, I believe, is convincing.

The perennial argument between Glugg and Chuff in the Feenichts Playhouse is terminated abruptly by the enveloping entrance of ALP: "insodaintily she's a quine of selm ashaker while as a murder of corpse when his magot's up he's the best

berrathon sanger in all the aisles of Skaldignavia" (254.31-.33). Aquinas, or "a quine", is linked to the feminine principle. The word "quine" must also be construed as 'quina', the bark of the Cinchona tree, which yields quinine ($C_{20}H_{24}N_2O_2$), an alkaloid employed as a febrifuge, tonic, and antiperiodic; quinine is also known as 'Jesuits' bark', which prompts Joyce's sketch of Shem as "dejected into day and night with jesuit bark and bitter bite, calico-hydrants of zolfor and scoppialamina by full and forty Queasisanos" (182.35-183.02), and as "a drug and drunkenry addict" (179.20-.21). Scopolamine is a belladonna extract; Joyce, through his eye troubles, was familiar with many alkaloids, most of which were narcotic. Although Aquinas lived three centuries before the founding of the Society of Jesus, the rigors of Jesuit education are spearheaded by Thomistic philosophy.

The noun "quine" may also be read as 'quintessence', as an examination of the etymological mutation in Finnegans Wake will easily show. One commentator on alchemy surprisingly states, of the fifth essence,

Today we know, for example, that there is a small proportion of a physiologically active chemical compound, quinine, in the bark of the cinchona tree and that this compound can be separated in a pure state and then purified no further. But if cinchona bark had been known to Paracelsus, he would have thought it contained a 'quintessence of bark' possessing all the antifebrile potency of the drug, and which could be raised to any degree of potency by successive purifications, becoming more and more spiritual and volatile as the work proceeded.⁴³

Aristotle's original definition of the quinta essentia as the substance latent in all matter, beyond the four elements, dominates all subsequent speculation. Paracelsus names the Light of Nature as the quintessence, extracted by God from the four elements, and dwelling "in our hearts".⁴⁴ In alchemy, the concepts of the divine water, spirit, pneuma, and quintessence are synonymous⁴⁵; quintessence often represents the lapis itself. Jung states:

The production of one from four is the result of a process of distillation and sublimation which takes the so-called 'circular' form: the distillate is subjected to sundry distillations so that the 'soul' or 'spirit' shall be extracted in its purest state. The product is generally called the 'quintessence'.⁴⁶

The most celebrated quality of the alchemical quintessence is its universality, its power to unite; in the 'Aquarium Sapientum', the filius macrocosmi, the lapis, is correlated with Christ, the filius microcosmi, and his blood is the quintessence, or the red tincture.

ALP is "a quine of selm ashaker", or 'a kind of salt-shaker, saltmassacre ("a murder of corpse"), or shaker, that is, a Quaker convulsionary, full of life (the Four Elders as voyeurs "rub off the salty catara off a windows and, hee hee, listening qua committe, the poor old quakers,"... (395.11.-12) . The sulphur-mercury theory, encountered as early as Zosimos (q.v.), dominated early alchemy. To these, Paracelsus (q.v.) added salt, resulting in the tria prima;

he identified salt with ash ("ashaker"), with the principles of fixidity and uninflammability, with body and will (while mercury is phlegma, smoking and evaporating, and intellect, and sulphur is fat, flaming and burning, and soul).⁴⁸ Aurora Consurgens identifies salt with the Holy Spirit,⁴⁹ and as "the mediator and uniter of opposites"⁵⁰ and the principle of Eros.⁵¹ Greverus⁵² says "Sulphur belongs to the sun or represents it, and salt stands in the same relation to the moon." Khunrath presses the point further than Aurora Consurgens, and, from the standpoint of Joyce's typology, more correctly, equating salt with Sophia or Feminine Wisdom.⁵³ Finally, salt is often connected to the tree, which in alchemy is the central symbol of Mercurius, the Spagyric demiurge;⁵⁴ "selm ashaker" conceals 'elm' and 'ash'.

All of the foregoing strongly suggests that ALP is the force which unites Shem and Shaun, mercury and sulphur, intellect and soul, the halves of HCE; indeed, she controls the twins, switching their identities in the van Hoother-Pranquean episode, and in the marginal crossover (287-293) during the revelation of the Feminine, in a fashion suggestive of the transference of the Freudian oedipal burden of guilt from id to superego in the later genital stage, that is, from Shem to Shaun. Aquinas is intimately concerned in this unification, corroborated by his own connections with the sulphur-mercury

theory.

Shem and Shaun share the Aquinas persona. Shaun, as the Mokse, names Aquinas and quotes briefly from the Summa Theologica ("Quas primas--but 'tis bitter to compote my knowledge's fructos of. Tomes", 155.21-.22),⁵⁵ to show Shem he has mastered Aquinas and is prepared to lug out the arguments. In the Play, Shem has again been frustrated in his eternal quest to guess the girls' colours; he becomes a penitent alchemist, vowing to "no more throw acids" (240.19), "with his tumescinquance in the thigh of his tumstull" (240.08-.09); this latter turgid passage includes a swelling in his stomach from attempting to devour all Five members of the family, the quintessence, and weighty Thomistic tomes. When Shem the black and obscene confronts the 'dumb ox', "the firewaterlover returted with such a vinesmelling fortytudor ages rawdownhams tanyouhide as would turn the latten stomach even of a tumass equinous" (93.07-.09); "firewaterlover" is both Shemish alcohol, considered a quintessence in the sixteenth and seventeenth centuries, and a combination of the fraternal contrarities, fire and water; Aquinas has a "latten" stomach because, like Shaun, he faces Rome, but also because, like Shem, he employs "upset latten tintacks" (183.20), a metallo-linguistic conglomerate. Finally, the scheming Shem characterizes the Ondt and the Gracehoper thus: "next time he makes the aquinatanace of the Ondt after this they

have met themselves, these mouschical umsummables, it shall be motylucky if he will beheld a world of differents" (417.08-.10); Shem and Shaun, who cross paths only for the "thirty minutes war" (246.03), and who are music-hall comedians and antagonists, can never form a Summa (he thinks) or an AUM.⁵⁶

The intimate fraternal rivalry is summed in a passage that sounds very like Aquinas, easily mutated to 'equinous':

Well, almost any photoist worth his chemicots will tip anyone asking him the teaser that if a negative of a horse happens to melt enough while drying, well, what do you get is, well, a positively grotesquely distorted macromass of all sorts of horsehappy values and masses of meltwhile horse. (111.26-.30)

There are alternate readings here, but it is most probable that "melt enough while drying" indicates two forces acting on the chemical product ("H₂CE₃", 95.12), fire--Shaun and water--Shem; these two are unbalanced, and the result is a muddle. This horseplay takes its cue from Stephen's 'dagger definition', "Horseness is the whatness of all horse".⁵⁷ The parody of the doctrine of substantial forms involves, I believe, a criticism of the missing logical link, supplied by Joyce in the form of ALP. The doctrine defines the remission of contrarities in a substance, in order to adapt the ingredients for a change, which is completed by the endowment of 'substantial form'; elements in compound also possess quality, but since they now no longer exist, it seems impossible for them to replace the interphase, 'substantial form'. What is

required is the postulation of a first essence, chaotic and formless; Aquinas seems never to have solved the logical difficulty. This essence in Joyce is ALP, as salt, for example, uniting contrarities.

Arabic Alchemists

The Golden Age of Arabic learning, 750-1150, appears to have been a consolidation of the cultural advances of previous empires, the Persian, the Egyptian, the Syrian, and, pre-eminently, the Grecian; much of their work was an elaboration of Aristotle, distinguished by minute classification of the natural world. Arabia is traditionally regarded as the transmitting agent of classical culture to modern Europe; indeed, the Arabian pharmacopoeia was a novelty when introduced into Europe in the eleventh century, via Constantine of Africa's De gradibus simplicibus,⁵⁸ and European alchemy in its infancy was an imitation of the previous speculations of the Arabs:

The first phase of Latin alchemy, exemplified by Michael Scot and the Liber claritas, derived from al-Razi and the Moorish alchemists. The works attributed to Albertus and Bacon represent a second phase, inspired by their philosophical approach to alchemy and by the work they esteem above all others, the De anima of pseudo-Avicenna. A third phase was initiated by fourteenth-century writers possessed of some familiarity with mineral acid technology. Although Geber was the great name to these adepts, the

Latin works carrying this name belong in the tradition of al-Razi and the real patron saints of late medieval alchemy were two illustrious Catalonians, Arnold of Villanova (c. 1235-1311) and Raymond Lull (c. 1232-1316).⁵⁹

Transmutation was not the central concern of the Arabian chemists, but rather technical chemistry, such as the development of apparatus, the preparation of chemicals, and the study of reactions. They attempted to divest chemistry of the occult, and much of their work was based on experiment; symbols were suspect, so that the Arabs were repelled by the paganism evident in the Greek and European love of abstruse nomenclature.

In a passage central to an understanding of his alchemical position, Joyce attributes the rise of modern European man partially to the Arabs:

Gutenmorg with his cromagnom charter, tintingfast and great primer must once for omniboss step rubrick-redd out of the wordpress else is there no virtue more in alcohoran. (20.07-.10)

The word "alcohoran" is a composite of the Koran, a major device in the Wake,⁶⁰ and 'alcohol', often regarded as the elixir, and prepared by reflux distillation, a process in which the Arabs were particularly adept.⁶¹

Arabic culture is especially concentrated in the School Lessons Chapter; the following is a comment on the fall of the masculine and the consequent alchemical rummaging in the ruins:

So, bagdad, after those initials falls and that primary tincture, as I know and you know yourself, begath, and the arab in the ghetto knows better, by nettus, nor anymeade or persan, comic cuts and series exerxeses always were to be capered in Casey's frost book of, page torn on dirty, to be hacked at Hickey's, hucksler, Wellington's Iron Bridge, and so, . . .
(286.04-.11)

The alchemists al-Kindli, al-Farabi, and al-Razi flourished in Bagdad; Avicenna moved to Persia after an orthodox reaction in that city.⁶² The alchemical context is supplied here by "nettus", or Agrippa (q.v.), and by "primary tincture", a union of prima materia and tincture. The prima materia represents one of the deepest archetypal veins in alchemy; briefly, it is ubiquitous; it is the source of all; it is a wheel (Zosimos); it is inexpressible (Paracelsus); it is moisture; it is feminine chaos, divided by the alchemist into the active and passive principles, which are purified and reunited as the Stone. The tincture is the mysterious dye employed in colouring metals so as to make them resemble gold, and, later, a name for the product of the Work; the Arabs were very proficient in this process. The phrase "the arab in the ghetto knows better" may be a sideglance at Avicenna, the leading physician and chemist of the age, whose works were so complete and so well known that his encyclopedic method, during the subsequent long centuries, discouraged original investigation.⁶³

The first of the great Arabian alchemists was Abu Abdallah Jabir ibn Hayyan, born Abdallah al-Kufi, more

commonly known as al-Sufi, Jabir, or, in its Latinized form, Geber (c. 720-?),⁶⁴ who is perhaps included in Joyce's distortions of the Arabic derivation, 'algebra', in "algebrars" (270.24) and "algebrist" (443.19). Geber was the intimate friend and family physician of the Barmecides, powerful ministers of Harun al-Rashid, caliph of the Arabian Nights, which is an important source for the dream-structure of the Wake,⁶⁵ in particular, for the tale of the tub (4.21), a passage with alchemical connotations as well.

In A.D. 803 the Caliph expelled the Barmecides, of whom he had grown jealous and suspicious, and Jabir shared in the downfall of his patrons. He fled to his father's town of Kufa, where he remained in seclusion for the rest of his life.⁶⁶

Joyce takes up the etym 'barm' with zest, after the portrayal of Shem as alchemist (78.07):

in so hibernating Massa Ewacka, who, previous to that demidetached life, had been known of barmicidal days, cook said, between soups and savours, to get outside his own length of rainbow trout and taerts atta tarn as no man of woman born, nay could, like the great crested brebe, devour his threescoreten of roach per lifeday, ay, and as many minnow a minute (the big mix, may Gibbet choke him!) was, like the salmon of his ladderleap all this time of totality secretly and by suckage feeding on his own misplaced fat. (79.05-.13)

The sense of this most revealing passage is roughly: HCE, when alive, overcame the power of Shem ("rainbow trout") and ALP, and devoured the entire family, seventy carp "per lifeday", or Liffey, and "many minnow a minute", SheM and ShauN, but

now is unfairly living in secret, subsisting on his own flesh, which is Shaun, for fat is sulphur in alchemy (q.v. Paracelsus) and Shaun is sulphur. The multiconnotative etym 'barm' is particularly suited to Joyce's purposes, including as it does, in English, the meanings 'bosom or lap', 'froth on malt, or yeast', and 'turret or battlement', in the word 'barmkin'; the adjective 'barmecidal' entered English from the story of the Barmecide who, pretending they contained savoury foods, placed a succession of empty dishes before a beggar, who humourously, and wisely, accepted them. The relation is obvious to the main cannibalism theme, which runs through the Wake, appearing first on page seven, where HCE, "a fadograph of a yestern scene" (7.15) and "fraudstuff" (7.13), disappears before he can be devoured by the other members of the Family. Unfortunately, Geber does not appear in a context well-suited to him (unless it be in the doubtful "Gibbet"?), nor during the revival of the Barmecides in the nostalgic reminiscences of the Four, who remember Shem, Shaun, and Izod:

when Fair Margrate waited Swede Villem, and Lally in
the rain, with the blank prints, now extincts, after
the wreak of Worman's Noe, the barmaisigheds, when
my heart knew no care. (387.18-.21)

However, Shem is the Black Prince, and "Lally", a reference to Raymon Lull (q.v.).

In the Washerwoman Chapter, ALP is represented as a

saviour who gives gifts:

her arms encircling Isolabella, then running with
reconciled Romas and Reims, on like a lech to be off
like a dart, then bathing Dirty Hans' spatters with
spittle, with a Christmas box apiece for aisch and
iveryone of her childer, the birthday gifts they dreamt
they gabe her, the spoiled she fleetly laid at our
door! (209.24-.29)

ALP has 101 or 1001 presents, relating to The Arabian Nights,
and to dreams; this implied Arabic context allows a reading
of "gabe her" as Geber.

Although Geber did not base his fundamental theoret-
ical concepts upon transmutation,⁶⁸ it is certain that

Jabir's chief practical aim was the preparation of
the magic transmuting tincture, elixir, or powder of
projection. The corresponding laboratory operations
were correlated with the celebrated sulphur-mercury
theory of the composition of metals . . .⁶⁹

Geber relied upon the theory of the four humours, an Aristo-
telian derivation, while neo-Pythagorean numerology and astro-
logy were important in determining compositions and timing;
repeated distillation was a chief concern. He is also im-
portant to the nomadic Joyce, because, as al-Nadim's Fihrist
(987 A.D.), the bibliography of the Moslem world, testifies,

They maintain that he kept roaming about the countries
without settling in a place because he feared the
government would attempt his life (as a subversive--
Editor's note).⁷⁰

The second great alchemist of the age was Ishaq al-
Kindli (ca. 800-870), known also as Abu Yusuf Yaqub, an eclectic
neo-Platonist and neo-Pythagorean, an astrologer and natural

philosopher, sceptical of alchemy and of the preparation of silver and gold by transmutation, probably the first Moslem to dispute the validity of the Art.⁷¹ The honesty of this position is in odd juxtaposition to the advice to readers of his "Book on the Chemistry of Perfume and Distillations" on the possibility of producing ersatz mixtures that could pass as more costly drugs.⁷²

The references to al-Kindli in the Wake depend upon a knowledge of Atherton's ingenious detective work on Joyce's use of the Koranic suras. First, he notes that "Our cubehouse still rocks as earwitness . . ." (5.14) implies Ka'aba, the centre of the Moslem world, and the sacred black stone⁷³ (failing to see the 'Hecuba' elision, however). Second, the 'telephone numbers' in the Wake correspond to suras, so that "that royal pair in their palace of quicken boughs hight The Goat and Compasses ('phone number 17:69, if you want to know) his seaarm strongsround her" (275.14) refers to Koran 17.69, a passage assuring Allah's Providence, corroborated by "Goat and Compasses", a corruption of 'God encompasses us'⁷⁴. Third, the passage, "a lur of Nur, immerges a mirage in a merror, for it is where by muzzinmessed for one watthour . . . bottle-filled" (310.24), suggests sura 24, "Nur" ('Light'), which compares God's light to a lamp in a glass. The overtones

of these three passages, Ka'aba and Hecuba, the union of HCE and ALP, and light, are amalgamated in a passage which Atherton overlooks, "What's Hiccupper to hem or her to Hagaba? Ough, Ough, brieve kindli" (276.08-.10), which with the Arabic context, and the Macbeth-Hamlet reference, allows us to deduce that al-Kindli ("brieve kindli") was once the light of the world, joining masculine and feminine, but that now, since he is extinguished, the marriage has disintegrated; the larger historical reference is to the rise and fall of the Arabic Empire, which reached its zenith at the time of al-Kindli, who was the first to scoff at alchemy, the last remnants of mythological consciousness, and to embrace rootless analytic consciousness, which cannot exist for long in a vacuum.

Al-Kindli is named in "kindlelight" (20.20) and in the reference to HCE as "the kindler of paschal fire" (128.33-.34). The validity of the latter identification is underscored by the passage "A flasch and, rasch, it shall come to pasch, as hearth by hearth leaps live" (594.16-.17), which links "pasch" and "rasch", where "rasch" includes Haroun al-Raschid, and perhaps al-Razi or Rhazes (866-925), the alchemist, and by "and a hundred and eleven other things . . . will commission to the flames" (425.31), which, as Atherton notes,⁷⁴ includes sura 111, 'Flame', in which Abu Lahab is burned on a pyre.

Al-Farabi (d. 950), a minor figure compared to these

other glorious heroes of Islam, may be a minor overtone of "allforabit" (19.02), which has no substantiating context.

Abu Ali al-Husain Ibn Abdallah Ibn Sina, or Avicenna (980-1037), a vigorous opponent of alchemy,⁷⁵ was a polyhistor and is still known in the Moslem world today as the "prince of all learning". His early works examined prodosy, law, and ethics, but he achieved his greatest fame as a physician. He became the model universal encyclopedist, fixing the system of learning for centuries;⁷⁶ Joyce had a similar ambition, and this is probably the main reason for the inclusion of Avicenna, for all his predecessors must be discredited in order that he win the mantle. Although he followed Galen in most respects, he was an inductive thinker, unlike his even more influential predecessor. His works are filled with observations on chemistry and on the formation of minerals and mountains.

Shaun's epithet, "Ibscenest nanscence" (535.19), directed towards Shem, links the black brother with both Ibn Sen and Ibsen; Shem-Joyce includes many famous physicians, because of Joyce's abortive medical career in Paris. It is more likely, however, that Shaun's statement is a comment on the unconscious perception of Shaun's mind, by Joyce, for the amalgam is a contradiction, if Shem is the alchemist, since Avicenna is an opponent of alchemy, while Ibsen is Joyce-Shem's hero.

Avicenna appears twice in a passage in which Shaun explains to the Four the principles of duality:

---Dearly beloved brethren: Bruno and Nola, leymon bogholders and stationary lifepartners off orangey Saint Nessau Street, were explaining it avicendas all round each other ere yesterweek out of Ibn Sen and Ipanzussch. When himupon Nola Bruno monopolises his egobruno most unwillingly seses by the mortal powers alionola equal and opposite brunoipso, id est, eternally provoking alio opposite equally as provoked as Bruno at being eternally opposed by Nola. (488.04-.11)

This highly convoluted and garbled statement by Shaun seems to mean simply that the brothers of the human psyche are irreconcilable. A parallel denial from the writings of Avicenna, which Shaun enlists as support, is

there is very little doubt that, by alchemy, the adepts can contrive solidifications in which the qualities of the solidifications of mercury by the sulphurs are perceptible to the senses, though the alchemical qualities are not identical in principle or in perfection with the natural ones, but merely bear a resemblance and relationship to them.⁷⁸

Alchemy is essentially an affirmation of human power to manipulate and unite the phenomenal world and, for the philosophical alchemists, to make whole the human soul; both Avicenna and Shaun are opposed to this heresy.

Basil Valentine

Although the identity of Basil Valentine is utterly veiled, he is said to have authored hundreds of works on alchemy.⁷⁹ He worked from the theory of the three principles, like Paracelsus, and his approach, imbued with diatribe, is reminiscent of that of Theophrastus. Basil's presence in the Wake as HCE is highly esoteric; Antonius "wags an antomine art of being rude like the boor" (167.03). The alchemist had for a long time been experimenting with the medicinal uses of antimony, and after another failure, he discarded some antimony residues. Unnoticed, the monasterial hogs ate some of these residues and grew exceedingly fat; when Basil came upon the phenomenon, he tried the concoction on the monks, who likewise became corpulent. Thereafter, the metal was known as 'antimoine', or 'monk's enemy'.⁸⁰ Antonius is 'rude', then, or 'red', the color of the Philosopher's Stone, since with his advent, the "grouptriad" is complete; the inclusion of Basil in the process of union links the latter to the motif of the devouring / devoured father.

Basil's name may be included in a passage wherein Shem again attempts to change colors, from his customary black, in order to join Shaun and HCE, white and red, the final two colors of alchemical perfection:

the diasporation of all pirates and quinconcentrum of a fake like Basilius O'Cormacan MacArty? To camouflage he turned his shirt. Isn't he after borrowing all before him, making friends with everybody red in Rossya, white in Alba (463.21-.24).

The term "diasporation", besides including the Biblical Dispersion (Deut., 28:25; John, 7:35), reinforces Shem's chameleonic tendencies, since it implies 'hydrate of aluminum', a compound which exists in varied colors; "quinconcentrum" is obviously cognate with an inner quintessence, especially in its aspect as a tingeing agent.

Charles Baudelaire

In his interview with the Four, Shaun proclaims his intimacy with Shem:

Spare me, do, a copper or two and happy I'll hope you'll be! It will please me behind with thanks from before and love to self and all I remain here your truly friend. I am no scholar but I loved that man who has africot lupps with the moonshane in his profile, my shemblable! My freer! (489.23-.28)

Readers of English literature will associate immediately with Stetson, the "hypocrite lecteur!---mon semblable,---mon frère!",⁸¹ but as Eliot himself notes, the line is an echo of the introductory "Au Lecteur" of Baudelaire's Fleurs du Mal:

C'est l'Ennui!---l'oeil chargé d'un pleur involontaire,
Il rêve d'échafauds en fumant son houka.
Tu le connais, lecteur, ce monstre délicat,
---Hypocrite lecteur!---mon semblable,---mon frère!⁸²

No doubt, Joyce cites the lines as repayment of the debt to Eliot and to the Symbolistes; the well-known phrases are also a type for Joyce's concept of the artist as a sham.

However, upon closer examination of Baudelaire's poem, it is found that his intentions are alchemical:

Sur l'oreiller du mal c'est Satan Trismegiste
 Qui berce longuement notre esprit enchante,
 Et le riche metal de notre volonte 83
 Est tout vaporise par ce savant chimiste.

"Satan Trismegiste" is none other than the legendary Hermes Trismegistos (q.v.), the Thrice-Great Hermes, known throughout the ages as the supreme magus and alchemist; Baudelaire's usage of "Satan" appears to refer to the pagan opponents of the embryonic Christian Church, who were branded as minions of hell for propaganda purposes; the French "chimiste" is specifically an alchemist. Shem, the "shemblable" above, is thus the Magus-Alchemist, who vaporises the soul of Shaun, 'freeing' him and transforming him into HCE's heir; Shem is always his mother's son, and ALP would "frame a plan to fake a shine" (206.07).

Giordano Bruno (1548-1600)

'This terribly burned heretic, one of Joyce's favorites, has been discussed at length in the Joyce criticism.⁸⁴ Bruno

was not an alchemist in any sense, but he studied and admired Raymon Lull, apparently the initiating spark in Bruno's pan-theism,⁸⁵ and he cites Paracelsus in De monade numero et figura, classing him with Zoroaster and Plato as builders of his temple of wisdom.⁸⁶ One faintly possible alchemical connection of Bruno in the Wake is the mention by Cardan (1501-1576), the Italian provocateur, shyster, bon vivant, and alchemist, of a preparation of sulphuric acid by collecting the fumes of flaming sulphur on a glass called a 'nola';⁸⁷ the word "nola" appears thrice in the Wake, as Bruno's identifying mark, in Shaun's speech denying fraternal peace, a passage in which Avicenna (q.v.) is mentioned twice. Joyce may have read Cardan, versed as he was in the Italian Renaissance, but the only possible reference in the Wake is in playing cards and in cardinals, both dubious; however, "cardinhands" does appear a few lines after the "So, bagdad, after those initials falls and that primary tainture" passage (286.04; q.v. Arabic Alchemists).

Cleopatra

A cleopatrician in her own right she at once complicates the position while Burrus and Caseous are contending for her misstery by implicating herself with an elusive Antonius, a wop who would appear to hug a personal interest in refined chees of all chades at the same time as he wags an antomine art of being rude like the

boor. This Antonius-Burrus-Caseous grouptriad may be said to equate the qualis equivalent with the older socalled talis on talis one just as quantly as in the hyperchemical economantarchy the tantum ergons irru-
minate the quantum urge so that eggs is to whey as whay is to zeed like your golfchild's abe boob caddy. (166.34-167.08)

This passage, and the entire Burrus-Caseous tale, is alchemical; "hyperchemical economantarchy" links the construction of HCE to alchemy, while the phrase "an antomine art of being rude like the boor" is a direct reference to the alchemist Basil Valentine (q.v.). The "cleopatrician" here is Cleopatra the alchemist, as well as the queen, an enigmatic figure, known only through fragments like the following dialogue with Ostanes, also buried in history and regarded by many as the first, divine alchemist:

Thus the legendary Ostanes, speaking of the 'philosophy', says to his pupil Cleopatra: "In you is hidden the whole terrible and marvellous secret Make known to us how the highest descends to the lowest, and how the lowest ascends to the highest, and how the midmost draws near to the highest, and is made one with it; how the blessed waters come down from above to awaken the dead, who lie round about in the midst of Hades, chained in the darkness; how the elixir of life comes to them and awakens them, rousing them out of their sleep"

Cleopatra answers: "When the waters come in, they awaken the bodies and the spirits, which are imprisoned and powerless Gradually they bestir themselves, rise up, and clothe themselves in bright colours, glorious as the flowers in spring. The spring is glad and rejoices in the blossoming ripeness they have put on." 88

Here is summarized Joyce's typology for Izod and the rainbow girls, who are clouds (Latin 'nubes') in "nubilee

letters" (205.07), flowers in "they are florals" (227.15), color in "cadenzando colorature" (226.30), and rain in "W waters the fleurettes of novembrance" (226.32). Ostanes wants the secret of joining the three worlds, and Cleopatra supplies the ritual reply; Izod as Cleopatra, above, is the common sexual target for the three males, transforming them into a chemical "group-triad", HCE. The father here is antimony, known in alchemy as the grey wolf or lupus metallorum, because it devoured all known metals but gold and thus was equated with Saturn⁸⁹; in the Wake, the Father is a devourer in his daytime aspect, reversing the cannibalism motif (q.v. Arabic Alchemists). The phrase "golfchild's abe boob caddy" refers to Faulkner's The Sound and the Fury, in which Benjie watches for golfballs, thinking of Caddy, and to his As I Lay Dying, wherein the genealogy of the Bundren family follows the alphabet, so that Anse and Addie Bundren beget Cash and Darl, but then Jewel, the madman, followed by Dewey Dell, a stuttering attempt to redress the balanced order, and finally Vardaman, a complete sport; Joyce points to Faulkner as a writer working similar veins, both in technique and in theme, for As I Lay Dying is the result of an impotent father and an all-pervasive mother.

Cleopatra purportedly invented the alembic, employed in reflux distillation, which links her to Shem's alcohol, and to the thousandfold circulation which is ALP's task and Finnegans

Wake itself. She was one of the first to use shorthand representation, as the page of figures known as The Gold-Making of Cleopatra⁹⁰ indicates; this is one of the earliest alchemical manuscripts and contains symbols for gold, silver, and mercury.⁹¹ In fact, in attempting to trace alchemy back to the point where it disappears in the past, we discover that the first practitioners were probably women; the names Tapputi-Belatekallim ('the Perfumeress') and (----)ninu ('the Perfumeress') are inscribed on Akkadian cuneiform tablets describing perfume manufacture, found in Mesopotamia and dating from the thirteenth century B.C.⁹² The Mesopotamians were in addition excellent potters, strong support for Joyce's contention that his ALP is the prime mover, and the source of Shem's alchemical and magical powers,

Kenelm Digby (1603-1665)

Meanly in his lewdbroque take your tyon coppels token,
 with this good sixtric from mine runbag of jewels.
 Nummers that is summus that is toptip that is bottom-
 nay that is Twomeys that is Digges that is Heres. In
 the frameshape of hard mettles. For we all would fain
 make glories. It is minely well mint. (313.23-.28)

Perhaps it is the blunt metallic ring of the passage which forced Atherton to make the vague connection, "This is probably Digby, Hermes, and perhaps Thomas of Bologna---three alchemists---as Tom, Dick and Harry, i.e. any writers on

alchemy";⁹³ I find no reason for the statement, but let us assume it is Digby. Although definitely an alchemist, expending vast amounts of time and energy in the search for the Stone, along with his boon companion, Anthony van Dyck, who still found time during this mad frenzy to dash off a few Digby family portraits,⁹⁴ Kenelm Digby is a most minor figure in the history of alchemy, one of the thousands of amateur or part-time alchemists driven by greed and adventure in the vain search for the most inflated will-o-wisp in history.

After his career as a Royal privateer, Digby retired to become a Royalist and a founder of the Royal Society; even the staunch but gullible John Evelyn ("Accourting to king's evelyns", 94.28) calls him "an errant mountebank".⁹⁵ Digby's works are filled with references to weapon salves, which heal wounds when applied to the offending weapon, to magnetic and electric attractions, and to recipes for tinctures and for sack posset, clouted cream, and syllabub. He had a few genuinely scientific ideas, including discourses on fire, light, weight, and vegetable growth, but, in general, I believe Joyce uses him as a type of the charlatan alchemist, although the references to two becoming three in the quotation above suggest that this type is essential for completion of the individual. Digby may also figure in the Wake because his father, Sir Everand, was executed for his role in the Gunpowder Plot, and because of

his close relation to Ben Jonson (q.v.); Digby was Jonson's patron and literary executor, charged with publication of the Works, but one rumour suggests, however, that Jonson was in fact more interested in Digby's wife, Venetia, famed throughout England at the time for her exceeding beauty.

Galen (130-200?)

With Hippocrates, Galen of Pergamon was the prime authority in Western medicine for fifteen hundred years. He spent his youth in Pergamon, the shrine of Aesclepius, returning there in 158; driven out by war, he travelled to Rome and attained his dazzling fame, although much of the time he was occupied in patching up maimed gladiators. When the vain Commodus (180-192), who is important for the Wake, appearing as he does on the second line of the text, was strangled, Galen retired to Pergamon.

Shem is identified with the physician in "he went to Cecilia's treat on his sole to pick up Galen. Asbestopoulos! Inkupot! He is encaust in his blood" (424.06-.08). Galen revolutionized then-current theories of blood circulation; he regarded blood as the optimal and most suitable humour of the body,⁹⁶ although he sometimes rather confusedly understood it only as a blending of the humours.⁹⁷ Kakochymia is his term

for a faulty mixture of humours in the blood, resulting in disease.⁹⁸ Yellow bile was the principle of fire, and inflammation was usually a liver disorder.⁹⁹ Thus, Joyce-Shem's "encaust", or burning, besides referring to the Latin 'encaustum', the purple ink used by Roman and Greek emperors to sign documents and the root of the English 'ink', is, according to Galenic medicine, an inflammation, resulting in hardening and expansion of the arteries,¹⁰⁰ a liver disease,¹⁰¹ jaundice of the blood, caused by plethora or excess of yellow bile,¹⁰² or a bowel disorder, occasioned by the transformation of yellow into black bile.¹⁰³ Of course, since the remarks are uttered by Shaun, they must be taken with a grain of salt, but there are coincidences in Joyce's own life; the young Joyce was plagued with rheumatic fever, and his later alcoholic escapades certainly must have had some effect upon his liver.

Galen discusses the transfer of blood from the veins to the arteries via "anastomoses";¹⁰⁴ in Ulysses, Stephen meditates upon the "anastomosis of navelcords"¹⁰⁵ which ties every human being to Eve, while in Finnegans Wake, HCE and ALP conceive a child, contrary to what some critics have suggested about HCE employing a condom,¹⁰⁶ as "Humperfeldt and Anunska, wedded now evermore in annastomoses by a ground plan of the placehunter, whiskered beau and donahbella" (585.22-.24). With Galen in mind, it is possible to view HCE and ALP as halves

of the blood system, arterial and venous; Joyce underscores and enlarges this biological metaphor and repeats "annastomoses" in a most revelatory passage, worth quoting at length:

Our wholemole millwheeling vicocicrometer, a tetradomational gazeocroticon (the "Mamma Lujah" known to every schoolboy scandler, be he Matty, Marky, Lukey or John-a-Donk), autokinatonetically preprovided with a clappercoupling smeltingworks exprogressive process, (for the farmer, his son and their homely codes, known as eggburst, eggblend, eggburial and hatch-as-hatch can) receives through a portal vein the dialytically separated elements of precedent decomposition for the very-petpurpose of subsequent recombination so that the heroticisms, catastrophes and eccentricities transmitted by the ancient legacy of the past, type by tope, letter from litter, word at ward, with sendence of sundance, since the days of Plooney and Columcellas when Giacinta, Pervenche and Margaret swayed over the all-too-ghoulis and illyrical and innumantic in our mutter nation, all, anastomosically assimilated and preteridentified paraidiotically, in fact, the sameold gamebold adomic structure of our Finnius the old One, as highly charged with electrons as hophazards can effective it, may be there for you, Cockalooralooraloomeenos, when cup, platter and pot come piping hot, as sure as herself pits hen to paper and there's scribings scrawled on eggs. (614.27-615.10)

The Wake in miniature! The sense is: the Wake is a wheel, but having four parts (that is, squaring the circle, an alchemical mystery, and appearing in a Shemish context as "circling the square", 186.12), and operating via a process whereby three and four are accommodated (another alchemic enigma), in which three males are united ("hatched") by the feminine as the fourth; this fourth is life and liver ("portal") which, during the night, has purified all anomalies in man by destroying and

rebuilding, by separating the good and the bad ('dialysis' is a chemical procedure in which crystals are separated from a colloid), also alchemical, and then recombining into one, by transmitting the "adomic" or masculine unit-structure while male consciousness sleeps, so that HCE may rise in the morning; the great secret of the Wake, the Letter, follows this passage immediately. What is described here is an equally precise definition of the complete alchemical opus!

Shem is bonded to Galen in the passage wherein the "alshemist" "potched in an athanor" (184.18), 'athanor' being a technical term for the alchemical furnace:

of course our low hero was a self valeter by choice of need so up he got up whatever is meant by a stourbridge clay kitchenette and lithargogalenu fowlhouse for the sake of akes (184.11-.13).

The compound "lithargogalenu" is a fusion of two lead ores, litharge and galena; lead is the lowest metal and the alchemical symbol of putrefaction, the first stage in the Work. Galen is included, but the adjective 'galenic' in English refers to natural as opposed to artificial drugs, so that Shem is apparently himself a blend of two schools of thought here.

Galen did considerable research in pharmacy, which may explain his veiled presence as "galandher" in this pharmaceutical passage:

which I was bringing up my quee parapotacarry's orders in my sedown chair with my mudfacepacket from my cash

chemist and family druggier, Surager Dowling, V.S. to our aural surgeon, Afamado Hairdoctor Achmed Borum-borad, M.A.C.A., Sahib, of a 1001 Ombrilla Street, Syringa padham, Alleypulley, to see what was my water-good, my mesical wasserguss, for repairs done by bollworm in the rere of pilch knickers, seven yards to his galandhar pole on perch (492.19-.26).

Shaun appears to be carrying a prescription from a "cash chemist" (himself, since he has "cashcash characktericksticks", 149.21-.22) to Shem, the "aural surgeon", who analyses Shaun's excretory system.

Galen had a logical option of two world-views; being a philosopher as well as a physician, he subjected both to a rigorous examination. Democritus and the Epicurean school suggested an atomic view of existence; in medicine, this implied a material exchange during metabolism, especially with regard to the action of drugs. For Aristotle and the Stoics, and for Galen, qualities of matter were transferred during somatic process. Ultimately, the atomic doctrine was to lead to modern chemistry,

whereas the doctrine of the qualities favored the rise of the 'science' of alchemy. Like Galen, the later alchemists were greatly engrossed in the study of transferable or transmutable qualities.

It is not implied that Galen was an alchemist, although the concept was taken up as a central dogma by the alchemists.¹⁰⁷

By the time of Paracelsus, Galen, in fact a pagan, was revered throughout Europe as the "most Christian doctor",¹⁰⁸ and hence the violent popular reaction against Theophrastus when

it was reported that he had burned the works of Galen at Basle, though it seems that it was rather those of Avicenna.¹⁰⁹ Galen's first principle of pharmacology was that contrary cures contrary,¹¹⁰ so that, for instance, heat would cure an excess of cold. Paracelsus condemned Galen, an extremely unpopular manoeuvre at the time, and replaced him with his own concept of "specifics", drugs which act directly upon the body or upon a particular disease,¹¹¹ taking his cue from Della Porta and the doctrine of signatures. Soon after Paracelsus' protestant act of burning Avicenna's works in 1527, a poem defending the Galenic system appeared anonymously in Basle, written in dog-Latin, purportedly by Galen himself, from Hades; it attacked Theophrastus, mockingly addressing him as Cacophrastus¹¹² ('bad speech'). Shem's comment on the counting sequence which ends the School Lessons Chapter is "KAKAPOETIC LIPPUDENIES OF THE UNGUMPTIOUS" (308.R2); Galen was named 'Paradoxopoeus' ('he who wrought miracles')¹¹³ by some, so it is probable that 'KAKAPOETIC' is a hybrid of these archenemies, Cacophrastus and Paradoxopoeus, as well as translating 'bad poet'. Shaun's corresponding marginal note is "Balance of the factual by the theoric Boox and Coox, Amallagamated" (308.L2); "theoric" seems to echo 'theriac', Galen's universal antidote for poisons, especially since Shaun is speaking of a union of duality and of amalgams, a technical

alchemical term.

Galen is known as Galen of Pergamon; Joyce includes the city in "wun able rep of the triperforator awlrite blast through his pergaman hit him where he lived" (303.21-.23), an analogue of the Professor at the Breakfast Table brandishing a fork to inflict wounds in paper, "to=introdùce a notion of time [Upon à plane(?)sù' 'fàc'e'] by pùnt! ingh oles (sic) in iSpace?!" (124.10-.12), which, incidentally, may be drawn from Bruno's notion of the minimum of each species, metaphysically, a monad, spatially, a point (punctus), substantially, an atom.¹¹⁴ Joyce's position is attributable to Galen's opposition to the atomicists and the victory of atomic theory in this age, but a stronger derivation is a very important discovery which occurred in Pergamon at the time of King Attalos I, who defeated the Galatians, a tribe of Celts, in 235 B.C. (Attilad! Attattilad! Get up, Goth's scourge on you!", 257.01-.02). Attalos was anxious to rival Alexandria culturally and began the assembly of a library, but Ptolemy of Egypt was equally determined to prevent him and prohibited the export of papyrus; this scarcity led directly to the discovery and widespread use of animal skins (diphtherai) in writing, known as charta pergamena, or 'parchment', the material of the codex or book, as opposed to the papyrus volumen or scroll.¹¹⁵ Pergamon is useful to Joyce for other associations; it was an early seat of Christianity, one of John's

seven churches, and in 40 B.C., Antony presented the entire city library to Cleopatra¹¹⁶ ("when to the shock of both, Biddie Doran looked at literature", 112.26-.27).

Galen, though not a polyhistor, held that a physician should cure body, mind, and soul, and to this end studied logic, philology, and philosophy. He believed in dream divination, classing dreams according to their causes, physical, psychological, or divine, and once performed an operation upon himself, after receiving the correct procedural instructions in a dream.

Hermes Trismegistos

Yes, the viability of vicinals if invisible is invincible. And we are not trespassing on his corns either. Look at all the plotsch! Fluminian! If this was Hannibal's walk it was Hercules' work. And a hungried thousand of the unemancipated slaved the way. The mausoleum lies behind us (O Adgigasta, multipopulipater!) and there are milestones in their cheadmiliias faltering along the tramestrack by Brahm and Anton Hermes! Per omnibus secular seekalarum. Amain. (81.01-.08)

The passage is not primarily about HCE, but about Shem and Shaun, Hercules and Hannibal, the vicinals, who only approach union unconsciously; they have eternally ('per omnia secula secularum') been at odds ("secular seekalarum"), and the road of history is paved with a flood of graveplots, belonging to

the unredeemed, who starved because Adgigasta (a pastiche of "Gigas", one of the earth giants killed by Jove's lightning in the attempt to storm heaven, the Latin 'adgestus', an accumulation, and the Latin 'gaster', stomach) or HCE has hibernated with all the food, his own body, in his tomb; Shem and Shaun hope to engineer a link from the primeval grave by means of and in the same fashion as "Brahm" (perhaps Theosophy, which is termed 'Brahm-Vidya',¹¹⁷ but certainly the maternal principle, because of H.P.B. and because of the resemblance of the Hindu Brahma to the alchemical prima materia, or chaos, as in the Bhagavat-Gita⁻¹¹⁸) and "Anton Hermes", the father as the third joining the two, because of the "elusive Antonius" (167.01), who, with Burrus and Casseous, forms an ABC "grouptriad" and who is antimony (q.v. Basil Valentine); Shem and Shaun are the sons of mother and father, respectively, as in

Letter, carried of Shaun, son of Hek, written of Shem, brother of Shaun, uttered for Alp, mother of Shem, for Hek, father of Shaun. (420.17-.19)

Hermes is the demiurge of alchemy. He possesses multiple attributes, but here he is seen in his trinitarian aspect. Martial calls him "omnia solus et ter unus"¹¹⁹, while Ripley notes that the Holy Spirit is often represented as a winged old man, making him identical with Mercurius, the god of flight and of revelation, and with Hermes Trismegistos, his predecessor, who, together with the King and the King's Son, forms

the alchemical trinity.¹²⁰ In the Rosarium¹²¹, Hermes says,

Understand, ye sons of the wise, what this exceeding precious stone sayeth . . . 'And my light conquers every light, and my virtues are more excellent than all virtues . . . I beget the light, but the darkness also is of my nature . . . ';

that is, the stone, and Hermes himself, is the force which unites all contraries. He adds that "The basis of the art is the sun and its shadow",¹²² and that "the stone is midway between perfect and imperfect bodies, and that which nature herself begins is brought to perfection through the art."¹²³

The "mausoleum" above is that of HCE, but it may also belong to Hermes; traditionally, the famed Emerald Tablets (see below), inscribed on a slate of solid emerald in Phoenician, were discovered in the tomb of Hermes by Alexander the Great¹²⁴, while another legend suggests that the woman Zara, sometimes identified with the wife of Abraham, received the Tablets from the hands of the dead Hermes in a cave near Hebron¹²⁵, which is, as well, the burial spot of the early patriarchs of Israel; "Heremonheber" (604.04), primarily an acknowledgement of the sons of Milesius, another duelling archetypal pair, may contain this reference.

Hermes is associated with the tree, so that he corresponds to druidic Shem: "The tree's peculiar power to change into any animal shape is also attributed to Mercurius."¹²⁶ Shem is typed as Hercules, perhaps because of the characteristic proliferation of gods in any given mythological sys-

tem. This may be Hercules, the Byzantine Emperor Herclius (610-641), who observed that "This magistrery arises in the beginning from one root, which afterwards expands into several substances and then returns to one"¹²⁷, or the heroic Hercules, as "some of the adepts, with considerable justification, compared the operations of the Great Work with the labours of Hercules."¹²⁸

Hermes reputedly authored the staggering total of thirty-six thousand original writings dealing with alchemy¹²⁹; the most celebrated of these, and one of the few surviving fragments, is the Smaragdine Tablets, which I quote in full:

1. I speak not fictitious things, but that which is certain and true.
2. What is below is like that which is above, and what is above is like that which is below, to accomplish the miracles of one thing.
3. And as all things were produced by the one word of one Being, so all things were produced from this one thing by adaptation.
4. Its father is the sun, its mother the moon; the wind carries it in his belly, its nurse is the earth.
5. It is the father of perfection throughout the world.
6. The power is vigorous if it be changed into earth.
7. Separate the earth from the fire, the subtle from the gross, acting prudently and with judgment.
8. Ascend with the greatest sagacity from the earth to heaven, and then again descend to the earth, and unite together the powers of things superior and things inferior. Thus you will obtain the glory of the whole world, and obscurity will fly from you.
9. This has more fortitude than fortitude itself; because it conquers every subtle thing and can

- penetrate every solid.
10. Thus was the world formed.
 11. Hence proceed wonders, which are here established.
 12. Therefore I am called Hermes Trismegistos, having three parts of the philosophy of the whole world.
 13. That which I had to say concerning the operation of the sun is completed.¹³⁰

"These oracular pronouncements were held in superstitious veneration by the medieval alchemists, who appear indeed to have regarded them as the alchemical creed, or profession of faith in the Divine Art."¹³¹ Statements Two and Three hypothesize the unity of all matter, its common origin and its common soul; the phenomenal body is merely the temporary abode of the soul; substances undergo evolutionary processes and may be transformed by man. Statement Four names the sun and the moon, gold and silver, sulphur and mercury, as sources of the Stone.¹³² Statement Eight alludes to the kerotakis, a closed vessel in which thin leaves of metal could be exposed to re-fluxed vapours;¹³³ the device is attributed to Maria the Jewess, who is echoed in the phrase "things above and below", which, whatever its metaphysical implications, is derived from the use of circulatory stills;¹³⁴ the Stone is the link between heaven and earth and is often characterized as pneuma solidified.¹³⁵

Joyce's appeal to the Tablets forms the core of a major and succinct archetypal observation:

Pastimes are past times. Now let bygones be bei

Gunne's. Saaleddies er it in this warken werden, mine boerne, and it vild need olderwise³ since primal made alter in garden of Idem. The tasks above are as the flasks below, saith the emerald canticle of Hermes and all's loth and pleasestir, are we told, on excellent inkbottle authority, solarsystemised, one, there is rhymeless reason to believe, original sun. Securely judges orb terrestrial.⁴ Haud certo ergo. But O felicitous culpability, sweet bad cess to you for an archetypt! (263.17-.30)

The Smaragdine precept is repeated simply, with overtones of a bull hatching from an egg: "Belowing things ab ove" (154.35) Joyce identifies the Emerald Tables with HCE in a fashion that correlates Shaun ("tasks") and Shem ("flasks"), and the operation of the Work to ALP ("all's loth and pleasestir"). Alchemy is a most optimistic philosophy, arguing for the perfectibility of man, so Joyce inserts the running Augustinian motif of the secure judgement of the world. The continuation into "felicitous culpability", however, sets up the work-pleasure opposition fleshed out later in the Ondt-Gracehoper sequence. Haud certo ergo, literally, 'not at all do I therefore struggle', implies that since the human race, under HCE, is saved, there is no necessity for action; the inclusion of Puritanism and Milton (Shem's marginal snicker is "Paradox Lust") implies the necessity of action in expiation of guilt,¹³⁶ and the conflict of forces in man is cursed by Finnegans Wake.

As is usual in the alchemical passages, Joyce studs the passage with subliminal references to mining and to

alchemy. The phrase "mine boerne", although relating to the "burning would is come to dance inane" (250.16) motif and to the tree-sin-Shem-Hermes complex, contains 'bournonite', anti-monial sulphide of lead and copper; "saaleddies" suggests 'salt' and 'lead', while "Gunne's" may be 'gunnies', vacant spaces left in a mine after the lode has been removed, and a "flask" is also an iron bottle in which quicksilver is sent to market.

Hermes is very often a wind-god¹³⁷; Thoth "makes the souls to breathe." He often has wings,¹³⁸ which, by the time of Mercury, have become prehensile. In Statement Four of the Emerald Tables, the stone is carried in the belly of the wind; Joyce may be echoing this in "You gave me a boot (signs on it!) and I ate the wind" (19.33-.34) and in "Of their fear they broke, they ate wind, they fled" (258.05-.06), although the initial connections are HCE's pneumatic qualities and his disappearing food-corpse. Shaun's attempts to ascend are accompanied by "herm" and a double mention of wind:

kingscouriered round with an easy rush and ready relays by the bridge a stadion beyond Ladycastle (and what herm but he narrowly missed fouling her buttress for her but for he acqueducked) and then, cocking a snook at the stock of his sermons, so mear and yet so fahr from that region's general, away with him at the double, the hulk of a garron, pelting after the round, on Shanks's mare, let off like a wind hound loose (the bouchal! you'd think it was that moment they gave him the jambos!) with a posse of tossing hankerwaves to his windward like seraph's summonses on the air and a tempest of good things in packet shape teeming from all accounts into

the funnel of his fanmail shrimpnet, along the high-road of the nation, Traitor's Track, following which fond floral fray he was quickly lost to sight. (471.15-.28)

In a letter to Miss Weaver, August 14, 1927, Joyce mentions that Shaun is Trismegistos here in III, ii.¹³⁹ Glasheen notes this reference and continues, "Here and elsewhere Shaun is also Hermes as messenger, god of roads, master-thief, for he has stolen the letter and pretends it is his own",¹⁴⁰ to which we might add the emendation that Shaun is "kingscouriered" and is delivering the letter to HCE, "the region's general". Further evidence of the Shaun-Hermes association occurs when Shaun-Ondt refuses to attend the funeral party, with Thoth supporting his tactic (415.25). Shaun is characterized as "that halpbrother of a herm, a pillarbox" (66.26-.27), because a herm is a "milestone" (81.06) with a figure of Hermes, and Shaun is stone.

However, when Shaun fails to fly, he is seen delivering upon himself "a hermetic prod or kick" (470.02-.03); this leads to the suspicion that the submerged Shem is the motive power, as in "You gave me a boot", although Shaun appears to be in control, starting from and returning to earth, like Mercurius in the Smaragdine Tablets and the opposite of Christ's journey. That Hermes is pneuma allows the perception of his presence in Shem and the "ancestral pneuma of one whom, with rheuma, he venerated shamelessly at least once a week" (124.16-.17), in the form of a fourleaved shamrock; the herm, which Joyce identifies

with tomb, had four aspects, and Hermes is "in general connected with the number four",¹⁴¹ especially as an arboreal spirit. Shem as the Gripes-Alchemist

had allbust seceded in monophysicking his illsobordunates. But asawfulas he had caught his base semenyous sarchnaktiers to combuccinate upon the silipses of his aspillouts and the acheporeoozers of his haggynown pneumax to synerethetise with the broadchestviousness of his sweeatovular ducose. (156.10-.15)

Shem in his alchemical laboratory and "stourbridge clay kitchenette" sings "Mas blanca que la blanca hermana" (184.19).

These three references, however, do strongly suggest that Hermes and pneuma are forces outside Shem, perhaps a contradiction on Joyce's part, after the strong position accorded the Emerald Tables, for Hermes is pre-eminently the force of union and mediation.

Ben Jonson: "The Alchemist"

During¹⁴² our brief apsence^a from this furtive feugtig^b season adhere to as many as probable of the ten commandments touching purgations and indulgences and in the long run they will prove for your better guidance along your path of right of way. Where the lisieuse are we and what's the first sing to be sung? Is it rubrics^c, mandarimus^d, pasqualines^e, or veridads^f is in it, or the bruiselivid^g indecores^h of estreme voyoulenceⁱ and, for the lover of lithurgy^j, bekant or besant^k, where's the fate's^l to be wished for? Several sindays after whatsintime^m. I'll sack that sick serverⁿ the minute I bless him. That's the mokst I can do for his grapce. Economy of movement, axe why said^o. I've

a hopesome's choice^p if I chouse^q of all the sinkts
 in the colander^r. From the common^s for ignitious
 Purpalume^t to the proper^s of Francisco Ultramare^u,
 last of scorchers^v, third of snows^w, in terrorgam-
 mons howdydos^x. Here she's, is a bell, that's
 wares^y in heaven, virginwhite, Undetrigesima^z, vikissy
 manonna^{aa}. Doremon's! The same or similar to be kind-
 ly observed within the affianced dietcess^{bb} of Gay
 O'Toole and Gloamy Gwenn du Lake (Danish spoken!)
 from Manducare^{cc} Monday up till farrier's siesta^{dd} in
 china^{ee} dominos^{ff}. Words taken in triumph, my sweet
 assistance, from the sufferant pen of our jocosus
 inkerman militant^{gg} of the reed behind the ear.^{hh}
 (432.25-433.09)

This portion of Shaun's farewell speech, commissioning the
 girls to follow the liturgy and to observe the commandments,
 is riddled with double meaning, written as it is by Shem.
 Shaun desires to say 'I have hope if I choose from the calen-
 dar of saints'; at the same time, Shem tells us he has no
 choice but to fake or forge his case by alchemically trans-
 forming sewage or waste. The word "chouse" originally occurs
 in Ben Jonson's¹⁴³ The Alchemist; the character Dapper enters
 to be duped by Face and Subtle and says, "What do you think
 of me,/That I am a chouse?"¹⁴⁴ The origin of the word is
 Turkish, complying with the fact that the Society of Jesus
 was formed to convert the Turks; chāwush means a herald of
 a great man or a messenger, so Shaun employs the word. How-
 ever, in 1609, a Turk posing as a chiaus defrauded some Turks
 resident of England of £4000, and hence the sense 'cheat'.¹⁴⁵
 This primary allusion is strengthened by "common" and "proper";

in the opening scene of Jonson's play, the heroes Face and Subtle are on the verge of angrily dissolving their conspiracy to defraud the public with alchemy, when Dol Common, the third imposter, reunites them with a burst of verbal sorcery, wherupon Face exclaims:

For which, at supper, thou shalt sit in triumph,
And not be styled Dol Common, but Dol Proper,
Dol Singular: the longest cut, at night,
Shall draw thee for his Dol Particular.¹⁴⁶

This positive identification makes it probable that the following five coincidences are valid. Dol Common reappears in the washerwoman's "I heard he dug good tin with his doll" (197.20), and with Face and Subtle-Shem in ALP's gift, "a drowned doll, to face downwards for modest Sister Ann Mortimer" (210.23-.24). The word "Dee" is always the feminine delta,¹⁴⁷ as in "In the Dee dips a dame and the dame desires a demselle but the demselle dresses dolly and the dolly does a dulcydamble. The same renew" (226.15-.17), but John Dee (1527-1608), an astrologer and mathematician at Queen Elizabeth's court, is also included; Subtle's words to Drugger, composing a magical shopsign, establishes Jonson as one of Joyce's primary ancestors in wordplay:

He first shall have a bell, that's Abel;
And, by it, standing one, whose name is Dee,
In a rug gown; there's D and Rug, that's Drug:
And, right anenst him, a dog snarling Er;
There's Drugger, Abel Drugger. That's his sign.
And here's now mystery, and hieroglyphic! ¹⁴⁸

Sublimed thee, and exalted thee, and fixed thee
 I'the third region, called our state of grace?
 Wrought thee to spirit, to quintessence, with pains
 Would twice have won me the philosopher's work?
 Put thee in words, and fashion?¹⁵⁰

Like Joyce's more complex symbolic pair, Face and Subtle begin with internecine struggle; the conspiracy is temporarily healed by a woman, who appeals to their more easily gratified lust to cozen the fools of the day, but the power struggle later precipitates about another woman, the widow Dame Pliant. Joyce widens and sophisticates the theme of sexual rivalry, so that, for instance, Shem is sexually willing, but repulsive to the girls, while Shaun is desirable, but impotent. In the contention over Dame Pliant, Jonson brings as witness the Jacob-Esau motif, when Subtle exclaims, "I will not treat with thee: what, sell my fortune?/'Tis better than my birth-right"¹⁵¹; the biblical type is a basic pattern for the Shem-Shaun relation, for example, in the very early "What true feeling for their's hayair with what strawng voice of false jiccup!" (4.10-.11).

Face, Subtle and Dol base themselves in the London house of Face's master, Lovewit, who is rusticating because of plague; Face assures his fellows:

O, fear not him. While there dies one, a week,
 O' the plague, he's safe, from thinking toward London.
 Beside, he's busy at his hop-yards, now:

I had a letter from him. If he do,
 He'll send such word, for airing o' the house¹⁵²
 As you shall have sufficient time, to quit it.

The coincidence with Finnegans Wake is startling; HCE is also the deus absconditus, the sleeping ego in its "plagueburrow" (479.24), while the battle of the unconscious blazes like an epidemic, and his fall is closely linked with alcohol, as when he endeavours to rise in Chapter One: "It's our warm spirits, boys, he's spooring" (27.24-.25). Lovewit appears suddenly to draw together the disarrayed plot strands, claiming the fruits of the conspirators' labour, including the widow and her sizeable dowry, just as Izod falls to HCE; Subtle and Dol must flee, but Face reassumes his stewardship, just as Shaun is heir to the throne. Hopefully, HCE is reborn at the end of Finnegans Wake:

. . . the sameold gamebold adomic structure of our Finnius the old One, as highly charged with electrons as hophazards can effective it, may be there for you, Cockalooralooraloomenos, when cup, platter and pot come piping hot, as sure as herself pits hen to paper and there's scribings scrawled on eggs. (615.06-.10)

That Lovewit has sent a letter to Face is significant, for in Finnegans Wake it is, of course, ALP who is responsible for the Letter, and it is Shaun who delivers it to HCE; in Jonson, it is the mother who dies, as Subtle informs Face: "the mistress' death hath broke up house".¹⁵³ Furthermore, Lovewit is seen with "Forty o' the neighbours . . . about him",¹⁵⁴ while

in the Wake, forty is a central attribute of ALP, as in "her birthright pang that would split an atom like the forty pins in her hood" (333.24-.25). This archetypal reversal is a function of historical perspective; for Jonson, living during a rebirth of masculine energy, the masculine principle controls the awakening; for Joyce, living in a century of decline and leaden death, the feminine principle is to be apotheosized, while the Renaissance and, specifically, the printing press were the accomplishments of men, of "Gutenmorg with his cromagnon charter" (20.05).

However, the power of woman is not absent from The Alchemist; in Dol Common are fixed the forces of history, language, and pacification. In the opening scene, she elicits a promise of peace; in the Feenichts Playhouse, ALP as ANN terminates the struggle between Glugg and Chuff, who are "both carried off the set and brought home to be well soaped, sponged and scrubbed again" (220.16-.18). Scavenging in the heap for usable remains, ALP is the carrier of tradition; Face says of Dol:

If you but name a word, touching the Hebrew,
 She falls into her fit, and will discourse
 So learnedly of genealogies . . .¹⁵³

In her encounter with Sir Epicure Mammon, the chief victim, Dol feigns just such a frenzy, a discourse on language which is

most suggestive of Joyce's aims:

Where, then, a learned linguist
 Shall see the ancient used communion
 Of vowels and consonants----
 A wisdom, which Pythagoras held most high---- . . .
To comprise
 All sounds of voices, in few marks of letters----

 And so we may arrive by Talmud skill,
 And profane Greek, to raise the building up
 Of Heber's house, against the Ismaelite,
 King of Togarmah, and his habergeons
 Brimstony, blue, and fiery; and the force
 Of King Abaddon, and the Beast of Cittim:
 Which Rabbi David Kimchi Onkelos,¹⁵⁶
 And Aben-Ezra do interpret Rome.

Joyce's dependence on the letters HCE and ALP (which raise up a CHAPEL) and linguistic definitions such as "the abnihiliation of the etym" (353.22) and "the proteiform graph itself is a polyhedron of scripture" (107.08) parallel Jonson; more striking is the Dol-Izod correspondence manifested in Izod's Feenichts Playhouse portrait:

In the house of breathings lies that word, all fairness. The walls are of rubinen and the glittergates of elfin-bone. The roof herof is of massicious jasper and a canopy of Tyrian awning rises and still descends to it. A grape cluster of lights hangs therebeneath and all the house is filled with the breathings of her fairness, the fairness of fondance and the fairness of milk and rhubarb and the fairness of roasted meats and uniomargrits and the fairness of promise with consonantia and avowals. There lies her word, you reder! The height herup exalts it and the lowness her down abaseth it. It vibroverberates upon the tegmen and prosplodes from pomoeria. A window, a hedge, a prong, a hand, an eye, a sign, a head and keep your other augur on her paypaypay. (249.06-.17)

Window, hedge, etc., are the "few marks" of the Doodles family:

"Π, Δ, -, X, □, Λ, Γ " (299.F4); Jonson's persistent and pleasant custom of introducing each play with an acrostic Argument is a rudimentary precedent to Joyce's reductive entelechy.

Finally, The Alchemist is a comment on the uses of rhetoric and on the exploitative power of linguistic understanding over mere literalism; Face and Subtle overcome the dupes because the latter are trapped in the dazzling nets of jargon and cliché. The conspirators do not believe in the Philosopher's Stone, but in the ability of language to transform the mundane into gold; Face says

I will have
A book, but barely reckoning thy impostures,
Shall prove a true philosopher's stone, to printers.¹⁵⁷

Joyce's reworking of the metaphor is "Gutenmorg with his cromagnom charter, tintingfast and great primer must once for omniboss step rubrickredd out of the wordpress else is there no virtue more in alcohoran" (20.07-.10); the extent of his imposture is exceedingly more difficult to determine than that of Face and Subtle, but Shem's scheme is clear enough:

the consciquenchers of casuality prepestered crusswords
in postposition, scruff, scruffer, scrufferumurraimost
andallthatsortofthing, if reams stood to reason and his
lankalivline lasted he would wipe alley english spooker,
multaphoniaksically spuking, off the face of the erse.
(178.03-.07)

Language is sometimes stew in Finnegans Wake, but the repast often becomes vegetable greens:

till Duddy shut the Shopper op and Mutti, poor Mutti! brought us our poor suppy, (ah who! eh how!). in Acetius and Oleosus and Sellius Volatilis and Petrus Papricus! Our Old Party quite united round the Slat-bowel at Commons: Pfarrer Salamoss himself and that sprog of a Pedersill and his Sprig of Thyme and a dozen of the Murphybuds and a score and more of the hot young Capels and Lettucia in her greensleeves and you too and me three, twinsome bibs but hansom ates, like shakespill and eggs! But there's many a split pre-text bowl and jowl. (161.23-.32)

The psychopathologic condition incident to puberty, characterized by semi-aphasic ravings, and technically termed 'Hebephrenia', is also known as 'word salad'. An identical joke occurs in The Alchemist, when Face and Subtle, drowning Mammon in alchemic jargon, are interrupted by Mammon's sceptical ally, Surly:

Subtle: Ha' you set the oil of Luna in kemia?

Face: Yes, sir.

Subtle: And the philosopher's in vinegar?

Face:

Ay.

Surly: We shall have a salad.¹⁵⁸

Another noteworthy food metaphor occurs in The Alchemist when Face tells us that Drugger wants not a business charm, but a purgative for worms: "(By the way you must eat no cheese, Nab, it breeds melancholy:/And that same melancholy breeds worms)".¹⁵⁹ This medical lore is derived from Anatomy of Melancholy, wherein Burton advises:

Milk, and all that comes of milk, as butter and cheese,

curds, &c., increase melancholy (whey only excepted, which is most wholesome): some except asses' milk.¹⁶⁰

This is a fertile construct for Joyce; Shaun invokes "joyntstone" (192.35) and, six lines later, advises Shem:

Look up, old sooty, be advised by mux and take your medicine. The Good Doctor mulled it. Mix it twice before repastures and powder three times a day. It does marvels for your gripins and it's fine for the solitary worm. (193.05-.08)

A more formidable association is the Burrus-Caseous/butter-cheese/Brutus-Cassius/Shاون-Shem gestalt:

Burrus, let us like to imagine, is a genuine prime, the real choice, full of natural greace, the mildest of milkstoffs yet unbeaten as a risicide and, of course, obsoletely unadulterous whereat Caseous is obversely the revise of him and in fact not an ideal choose by any meals, (161.15-.19)

Like Bloom's "Cheese digests all but itself. Mighty cheese,"¹⁶¹ the caseine Shem is the alchemical universal solvent, for which, as several generations of pundits have shown, there could be no container; like the ravenous Saturn, we find Shem "setting on a twoodstool on the verge of selfabyss, most starved, with melancholia over everything in general" (40.22-.24).

Finally, The Alchemist reveals several incidental suggestions germane to the Wake. For instance, Subtle will counterfeit coins for the Anabaptist Brethren; the Wake is constructed on the bones of false coinage and Wood's ha'penny, on the tissues of shamming and forging. Finnegans Wake is

often conceived of as a haphazard conglomerate of glue clippings, to be sure, but also as a "crossroads puzzler" (475.03-.04) and a secret code; Joyce terms it "our wholemole millwheeling vicociclometer" (614.27) and on occasion amplifies the working instructions: "Now by memory inspired, turn wheel again to the whole of the wall" (69.05-.06). In Jonson, Subtle dupes Kastriel, the 'angry boy', with promises of a mechanical contrivance which instructs in social banter and argument; Face tells Drugger:

He has made a table,
With mathematical demonstrations,
Touching the art of quarrels. He will give him
An instrument to quarrel by.¹⁶²

The machine has restrictions, however, as Face tells Kastriel: "in oblique, he'll show you; or in circle:/But never in diameter."¹⁶³ Joyce's grand secret spirals into the centre of the text, through the most baffling series of indirection, where we find a circle, a zero, a vagina, ALP, who unites warring opposites into the "zeroic couplet" (284.10), that is, to infinity (∞).

Raymon Lull (1232-1315 or 16)

This Franciscan theologian and contemplative, poet and mystic, was of the first to establish Catalan in place of Latin.¹⁶⁴ Most of the remaining biography is in dispute. A flood of speculation and claim was laid at his feet: he discovered nitric acid and the Elixir; he found America; he was a troubadour, a Don Juan, a naturalist, a jurisconsult, a musician, a mathematician, a chemist, a navigator, and an alchemist. In the twentieth-century, most of the apocrypha has been laid aside, and his modern day biographer denies that he was an alchemist.¹⁶⁵

Nevertheless, Lull was considered an alchemical saint for five hundred years. Mylius quotes him as saying, "a certain oil of a golden colour is extracted from the philosophic lead"¹⁶⁶. Lull mentions "the good that is sought in our stone and Mercurius"¹⁶⁷. Hoghelande, quoting Lull as his authority, says that "owing to their ignorance men are not able to accomplish the work until they have studied universal philosophy, which will show them things that are unknown and hidden from others."¹⁶⁸ Jung claims that the oldest connection between Christ and the lapis philosophorum is in

Lull, and quotes him:

And as Jesus Christ, of the house of David, took on human nature for the liberation and redemption of mankind, who were in the bonds of sin on account of Adam's disobedience, so likewise in our art that which has been wrongfully defiled by one thing is absolved by its opposite; cleansed, and delivered from that stain.¹⁶⁹

The text Testament of Lullius is a systematic account of alchemical theory and practice, with operations symbolized by alphabet letters and processes by further combinations of these; no allegory is employed. God created 'argent vive', which gave rise to all other things; the finest part became the angels, the less fine the heavenly bodies, the coarsest, earth. In the terrestrial sphere, argent vive became the four elements, but part of it remained as the quintessence, which is in all; alchemy's task is to multiply its activity.¹⁷⁰ Another text gives a formula for the philosopher's stone. Finally, there is the famous "Mare tingerem, si mercurius esset", attributed to the fifteenth-century pseudo-Lull.¹⁷¹

Lull occurs in the Wake as a mediator of warring opposites, similar to the use of Hermes (q.v.) ("And Lully holding their breach of the peace for them", 96.19). In the passage

Ellers for the greeter glossary of code, callen hom:
Finucane-Lee, Finucane-Law.
Am. Dg.
Welter focussed.
Wind from the nordth. Warmer towards muffinbell, Lull.
(324.19-.23)

The word "wind" may include Hermes, with warmth a quality of Lull, a mystic who succeeded in reconciling himself to the Church. Finally, the frequent occurrence of the etym 'L--l', as in "Lily" and "Lilly", associated with the girls, may include Lull, who was one of the earliest defenders of the dogma of the Immaculate Conception,¹⁷² for which he earned the Church's recognition as 'Blessed'.

If Lull indeed does appear in the Wake, he would have had additional attraction for Joyce because he was said to have invented a mechanical method for the solution of logical problems through the use of concentric rotatable discs,¹⁷³ and because of his book of animal fables,¹⁷⁴ not as well known as those of Aesop or LaFontayne, but certainly suggestive of "The Mokse and the Grapce" and "The Ondt and the Gracehoper".

Maria the Jewess

sucks life's eleazir from the pettipickles of the Jewess and ruoulls in sulks if any popeling runs down the Huguenots; (133.19-.21)

Joyce's ascription here is to Abraham the Jew (q.v.) as HCE, drawing the "eleaxir", or elixir, of life from "pettipickles" or vinegar of ALP as Maria the Jewess. Maria

invented the bainmarie, the water bath used in distillation and in the sublimation of metals¹⁷³; Zosimos (q.v.) was indebted to her both for this apparatus and for the technique of repeated distillation. Basil Valentine refers to this apparatus and to the blackness that was Maria's first material¹⁷⁶ in his preparation for lead acetate:

if distill'd pure Vinegar be poured upon destroyed Saturn, and is kept warm in Marie's-bath, it loseth its acidity altogether, is as sweet as any Sugar, then abstract two, or three parts of that Vinegar, set it in a cellar, then you will find white transparent stones, like unto crystals, these are an excellent cooler and healer of all inflamed symptoms.¹⁷⁷

Vinegar in alchemy is the divine water, "the sharpest vinegar, which causes gold to become pure spirit"¹⁷⁸; the vessel itself is often identified with this aqua permanens, which is also known as 'the vinegar of the philosophers'.¹⁷⁹

The elixir is one name for the goal of the Work. The "Consilium coniugii" proclaims that "the elements of the stone are four, which, when well proportioned to one another, constitute the philosophical man, that is, the perfect human elixir."¹⁸⁰ In the treatise of Komarios instructing Cleopatra (q.v.), the water is described as an elixir of life which wakens the dead sleeping in Hades to a new springtime.¹⁸¹ The sick king in Ripley is to be healed by an elixir.¹⁸²

If we regard Finnegans Wake as a process whereby HCE and ALP, masculine and feminine, are conjoined, then that

central alchemical axiom, attributed to Maria, becomes important: "one becomes two, two becomes three, and out of the third comes the one as the fourth"; Jung cites this text and makes a most illuminating observation on the classic three-four opposition:

The number three is not a natural expression for wholeness, since four represents the minimum number of determinants in a whole judgement. It must nevertheless be stressed that side by side with the distinct leanings of alchemy (and of the unconscious) towards quaternity there is always a vacillation between three and four which comes out over and over again. Even in the axiom of Maria Prophetissa the quaternity is muffled and alembicated. In alchemy there are three as well as four regimena or procedures, three as well as four colours. There are always four elements, but often three of them are grouped together, with the fourth in a special position---sometimes earth, sometimes fire. Mercurius is of course quadratus, but he is also a three-headed snake or simply a three in one. This uncertainty has a duplex character---in other words, the central ideas are ternary as well as quaternary. The psychologist cannot but mention the fact that a similar puzzle exists in the psychology of the unconscious: the least differentiated or 'inferior' function is so much contaminated by the collective unconscious, that, on becoming conscious, it brings up among others the archetype of the self as well---τὸ ἐν τέταρτον, as Maria Prophetissa says. Four signifies the feminine, motherly, physical; three the masculine, fatherly, spiritual. Thus the uncertainty as to three or four amounts to a wavering between the spiritual and the physical---a striking example of how every human truth is a last truth but one.¹⁸³

The same, I believe, is true of Finnegans Wake. Although ALP is first the circle and zero, she has control over the Four and is strongly identified with them; thus in the van Hoothe-Prankquean episode, she steals the "jiminy" and "she had her four owlers masters for to tauch him his tickles" (21.28-.29).

The masculine representative is even more strongly linked to three, as in Shaun's attempt at a riddle:

---Three in one, one and three.
Shem and Shaun and the shame that sunders em.
Wisdom's son, folly's brother. (526.13-.15)

Maria is a revealing type for ALP, the woman who preserves and transforms; ALP forages and "all spoiled goods go into her nabsack" (11.18-.19), for she is a "peri potmother" (11.09), and this impulse coincides precisely with Maria's bainmarie.

Isaac Newton

And, heaving alljawbreakical expressions out of old
 Sare Isaac's universal of specious aristmystic unsaid,
 A is for Anna like L is liv. (293.16-.19)

Alchemy and theology were Newton's private interests; surviving manuscripts on alchemy in his hand comprise six hundred and fifty thousand words.¹⁸⁴ A catalogue of Newton papers¹⁸⁵ shows his familiarity with the entire works of alchemy and his status as an adept; he was a skillful experimenter, and much of his thirty-five years at Cambridge was served in the laboratory which he built himself. The writer of the foreward to this catalogue says:

he had set himself to discover the Elixir of Life,

and how to transmute base metals into gold. He was more than usually secretive about these romantic pursuits. Although so much of his life was spent in the company of Diana's Doves, chasing the Red and Green Lyons through the Twelve Gates, or elevating Mercury with the full Complement of Ten Eagles, he published only one chemical paper (De natura acidorum) and this gave no inkling of the ultimate and magnificent object of his researches. After his appointment to the Mint, of course, any open association of his name with Alchemy would have been most indiscreet. The rumour that the Master of the Mint could transmute copper farthings into bright golden guineas would have spread panic through the nations The Alchemy that Newton practised had more than its vocabulary in common with Mysticism, and no doubt it was by way of alchemy that Newton entered upon the Interpretation of the Prophecies which forms so large a part of his Theological writings. These amount to more than one-and-a-quarter million words and are mostly unpublished. ¹⁸⁶

Paracelsus (1493-1541)

Has not my master, Theophrastius Spheropneumaticus, written that the spirit is from the upper circle?
(484.30-.31)

So many of Paracelsus' ideas seem to correspond with Joyce's basic orientation that I have summarized at length the theories of this most revered and well-documented physician, alchemist, and magus. For Paracelsus (Theophrastus Bombast von Hohenheim), natural phenomena are the revelation of God's will relating to man's physical existence; the physician reads these signs and deciphers God's will. Earth and man, the

microcosm, are the centres of the macrocosm. All phenomena are interrelated and mutually affect one another; all things exert influence on man, but man, through a knowledge of the occult properties of nature, can influence the physical universe in a marvellous fashion.¹⁸⁷

The primary matter was Water, over which the spirit of God moved as an Archaeus. The primary man, the limbus minor, or Christ, emanates from der Saame (the seed) of all, the limbus major, boundless light.¹⁸⁸ All individuation is opposed to creation; it is the constructive force, but is linked with the fall of nature and man and with death. The individual disrupts the harmony of the universe, and the sum of disruption is Cagastum, the principle of mortality¹⁸⁹ (perhaps appearing in the Wake as "cagacity", 108.28; Paracelsus coined hundreds of words, including multilingual puns, but, with the possible exception of Cagaster, I have been unable to detect any of these natural precedents to Joyce's technique). All matter digests and excretes.¹⁹⁰ The body is born free from poison, but ingests it in food; the Archaeus or inner alchemist attempts to separate it off, while the prime Archaeus, or Iliaster, is also the alchemist of Nature, separating nutriment into useful and useless.

There are four sciences, all of which are essential to medicine: philosophy, astronomy, virtue, and alchemy.

Nature yields nothing perfect,

but man must perfect it. This perfecting is called alchemy. For the baker is an alchemist when he bakes bread, the vine-grower when he makes wine, the weaver when he makes cloth. Therefore whatever grows in nature useful to man--whoever brings it to the point to which it was ordered by nature, he is an alchemist.¹⁹¹

Although Paracelsus believed in the transmutation of metals, the Stone is identical to the Elixir, and alchemy is primarily the preparation of medicines.¹⁹²

Color changes occur during the Spagyric Art (his term for alchemy); black is fundamental, and becomes white, yellow, and finally, red.¹⁹³ There are three principles of material generation, salt, sulphur, and mercury; although this theory of the tria prima was formerly attributed to Basil Valentine, Paracelsus is now recognized as the initiator.¹⁹⁴ In the healthy body, the three are in proportion; when one is in excess, disease results.¹⁹⁵ Each has definite properties:

<u>Sulfur</u>	<u>Mercury</u>	<u>Salt</u>
oily	fluid	firm
burns	vaporizes	remains as ashes
soul	intellect	body
feeling	thinking	willing
fire (and air)	water	earth
energy	spirit	mass
resin	arcanum	balm
celestial	astral	visible and tangible
theology	mathematics	philosophy (science of nature)

Joyce's inclusion of the tria prima is Paracelsian,

reinforced by the Germanic spellings:

Ainsoph, this upright one, with that noughty besighed
him zeroine. To see in his horrorscup he is mehr-
kurios than saltz of sulphur. (261.23-.26)

According to Paracelsus, HCE is suffering from an overemphasis on mercury, on intellect and thinking; this would correspond to his death, if intellect is individuation, and individuation is mortality. On the other hand, mercury is also the life power, who cements the extremes of body and soul, usually cabbalistically associated by Paracelsus with the letter "m": the Hebrew 'Mem', Mumia, Magnalia, Massa, Mysterium, Macrocosmos-Microcosmos.¹⁹⁷ If we are not being too literal, this is Shem, who is also "m", one half of 'man', for he is certainly mercury in the Wake; "globules of mercury" (183.35) is one of the items in the paraphernalia found in his room. This implies that Shem, his mother's son, is the cause of HCE's death, while Shaun is the heir; Paracelsus denoted sulfur by the Hebrew "Shin",¹⁹⁸ so the coincidence appears to be complete.

The life of Paracelsus contains countless incidents, details, and half-baked theories that would have attracted Joyce: word-coining, dictionaries of terminology, a restless and wandering life, seldom sober and often intoxicated when composing his books.¹⁹⁹ He believed that the essence of the body can be stimulated by magnetic forces, after a recognition

by the signature; these magnets, called 'mummies', were prepared by putrefaction of blood and excrement in an eggshell sealed with isinglass and placed under a hen; the fleshy mass found in the egg when the hen's chicks hatched was baked like bread and was then ready for use. This most eccentric preparation is strongly suggestive of Joyce's chicken-egg controversy and of Shem's baking proclivities. Finally, the man who was capable of basing his greatest work on his father's anecdote of Buckley and the Russian General²⁰⁰ would heartily appreciate Paracelsus' treatment of the physicians of Basle:

His lectures were very unconventional and gave great offence to the physicians at Basel, whom he is said to have invited to a lecture on the greatest secret in medicine (or on fermentation), which he began by uncovering a pan of excrement, whereupon his audience fled in anger, Paracelsus shouting after them: 'If you will not hear the mysteries of putrefactive fermentation, you are unworthy of the name of physicians.' 201

Joyce's use of Paracelsus seems difficult to determine. While Atherton states, without giving his reasons, that it is unlikely that Joyce ever read Paracelsus, suggesting the Digressions to Swift's Tale of a Tub as a source²⁰², it is true that there are very many points of coincidence, and Paracelsus is one of the few historical personages to appear without being scoffed at or distorted. A biography of Paracelsus by Anna M. Stoddart, published in 1915, may be included in "stoddard" (584.01). Paracelsus, under his family name,

'Bombast', assuredly figures in this passage, which refers to "hypnotised", "hopesey's doper", and "adepted", and to the cursing and invective so characteristic of Theophrastus:

And hopy dope! sagd he, anded the endurer, now dyply hypnotised or hopesey's doper himself. And kersse hime, sagd he, after inunder tarrapoulling, and the shines he cuts, shinar, the screeder, the stitchime-snyder, cummanisht, sagd he, (fouyoufoukou!) which goes in the ways of smooking publics, sagd he, bomboosting to be in the litest civile row faction. (320.01-.06)

(For more discussion of Paracelsus, refer to "Agrippa" and to "Galen".)

Plato

Plato is a major source for the Wake²⁰³ and occurs as frequently as any man mentioned; very often, this is in an alchemical context. He is identified with "Margareen" in "the babbling pumpt of platinism" (164.11), with "platinum" (192.17), and with "plattonem blondes" (257.11); platinum in modern chemistry is employed as a catalyst. He is "Aasdockter Talop" in a chemical context, and he is disguised in "P.t.l. o.a.t.o. So, bagdad, after those initials falls and that primary taincture" (286.03-.05) (q.v. Arabic Alchemy). Butt-Shem, speaking of his "postleadeny past", recoils with "platoonic leave" (348.08).

In the Timaeus, the world-creator brews the cosmos in a colossal krater; Zosimos (q.v.) was influenced by this concept, and by that of the World Soul, naming him "the thrice-great Plato".²⁰⁴ Petrus Bonus held that ancient authorities of the art, like Hermes, Moses, and Plato, knew the secret of the alchemical process.²⁰⁵ Greek thought exerted a powerful influence on medieval alchemy; the idea of matter as a passive recipient upon which qualities are imprinted is Platonic,²⁰⁶ as well as the theory of the unity of matter.²⁰⁷

Giambattista Della Porta (1535-1615)

The Italian Porta is acknowledged twice in Finnegans Wake, as "Gambariste della porca" (9.35-.36) and as "Porta Lateen" (205.27). He was a poet, but his fame lies in the twenty volumes of his Magia Naturalis, an immensely popular work, going through thirty editions.²⁰⁸ This collection of recipes, superstitions, and little-known information deals with the causes of wonderful things (magic), the generation of animals by putrefaction, the multiplication of food, transmutation of metals and chemical experiments,²⁰⁹ magnets, medicine, cosmetics, distillation, perfume, pyrotechnics, cooking, fishing, invisible writing, counterfeiting, and other

useful pleasantries. His central value to Joyce is the doctrine of signatures, taken up by Paracelsus (q.v.), which suggested that a disease could be healed by employing herbs and plants bearing appropriate signs; thus, lungwort, because of its leafy and spongy resemblance to a body part, was thought helpful in curing lung ailments.²¹⁰ The theory is derived from folklore, the Qabbalah, and later neoplatonists like Ficinus.²¹¹ Joyce's types, in particular, HCE, who usually wears seven articles of clothing, appear to be influenced by Della Porta; he asks "why, pray, sign anything as long as every word, letter, penstroke, paperspace is a perfect signature of its own?" (115.06-.08).

W.B. Yeats

The Joyce-Yeats relation has been firmly documented²¹², and Yeats appears frequently in the Wake.²¹³ The central influence on Joyce is probably the experiments of Yeats (and AE) with the occult, beginning with the hermetic and later wandering into theosophy, in the passionate search for a viable mythology which would direct surgent celtic nationalism; in Ulysses, "Seven is dear to the mystic mind. The shining seven W.B. calls them",²¹⁴ but Stephen is less kind to the cultists:

Dunlop, Judge, the noblest Roman of them all, A.E.,
Arval, the Name Ineffable, in heaven hight, K.H.,

their master, whose identity is no secret to adepts. Brothers of the great white lodge always watching to see if they can help. The Christ with the bridesister, moisture of light, born of an ensouled virgin, repentant sophia, departed to the plane of buddhi. The life esoteric is not for ordinary person. O.P. must work off bad karma first. Mrs Cooper Oakley once glimpsed our very illustrious sister H.P.B.'s elemental!

O, fie! Out on't! Pfuiteufel! You naughtn't to look, missus, so you naughtn't when a lady's ashowing of her elemental. ²¹⁵

Yeats of the Inner Circle occurs in the Wake as Shem in the process of color change, which happens "every time a gat croaked" (177.07), presumably a function of sexual frustration: "his bleyes bcome broon to suite his cultic twalette" (344.11-.12).

The Celtic Twilight is primarily concerned with conjuring up the gossamer world of fairy, so that "cultic" must refer to passages like the following, in which Yeats speaks of Moran, the blind "poet, jester and newsman" of nineteenth-century Dublin:

The best-known of his religious tales was St. Mary of Egypt, a long poem of exceeding solemnity, condensed from the much longer work of a certain Bishop Coyle. It was told how a fast woman of Egypt, Mary by name, followed pilgrims to Jerusalem for no good purpose, and then, turning penitent on finding herself withheld from entering the Temple by supernatural interference, fled to the desert and spent the remainder of her life in solitary penance. When at last she was at the point of death, God sent Bishop Zozimos to hear her confession, give her the last sacrament, and with the help of a lion, whom He sent also, dig her grave. The poem has the intolerable cadence of the eighteenth century, but was so popular and so often called for that Moran was soon nicknamed Zosimos, and by that name is he remembered. ²¹⁶

Zosimos is hardly the bishop and saint Yeats believes; he was first a gnostic and an alchemist. Joyce makes extensive use of Zosimos' (q.v.) speculations, primarily the text known as "The Visions of Zosimos", but it is likely that Moran is always included in the name. There is little doubt that "Mary" here is the fabled Maria the Jewess (q.v.), inventor of the athenor, and an important type of ALP in her aspect of cook, cosmetician, and witch.

Yeats mentions twice the medieval Spanish mystic Raymon Lull (q.v.), often accused of being an alchemist, and employed frequently in the Wake:

It were perhaps well for us all if we would-but raise the cry Lilly the astrologer raised in Windsor Forest, 'Regina, Regina, Pigmeorum, Veni', and remember with him, that God visiteth His children in Dreams. Tall, glimmering queen come near, and let me see again the shadowy blossom of thy dim hair.²¹⁷

The intent differs as dogma from blasphemy, but Joyce's paean to Woman is a striking comparison:

In the name of Annah the Allmaziful, the Everliving, the Bringer of Plurabilities, haloed be her eve, her singtime sung, her rill be run, unhemmed as it is uneven! (104.01-.03)

Yeats' second reference to Lull finds him conversing with the fairies:

To their trained eyes and ears the fields are covered by red-hatted riders, and the air is full of shrill voices---a sound like whistling, as an ancient Scottish seer has recorded, and wholly different from the talk of the angels, who 'speak much in the throat, like the Irish', as Lilly, the astologer, has wisely said.²¹⁸

Sentimental, no doubt, but perhaps Joyce agrees: "Behove this sound of Irish sense" (12.36-13.01).

Zosimos

Zosimos (or Rosinus), a third century gnostic, is the earliest writer known with certainty to have been an alchemist;²¹⁹ unlike many later seekers of the Stone, he maintained a balance between theory and practice.²²⁰ Zosimos is the central alchemist in an understanding of the role of the Spagyric Art in Finnegans Wake; his name alone appears six times.²²¹ The passage "if what is sauce for the zassy is souse for the zazimas" (186.16) joins Zosimos and alchemy to Joyce's "one man's fish and a dozen man's poissons" (451.05-.06) motif and to the theory of opposites and of duality, upon which Zosimos relied heavily, in the form of the sulphur-mercury hypothesis.

Shem's explanation that "according to his own story, he was a process server and was merely trying to open zozimus a bottlop stoub by mortially hammering his magnum bonum (the curter the club the sorer the savage) against the bludgey gate" (63.31-.34) relates Zosimos, alchemy, and alcohol, Shem's major signum; Zosimos was one of the first to practice repetitive distillation,²²² and in his Visions,²²³ scalping ("mortially ham-

mering") signifies psychological transformation of the head,
 the arcane substance.²²⁴

Shaun's denial of the transformation of a sow's ear,
 "Rats! bullosed the Mookse most telesphorously, the concionator,
 and the sissymusses and the zössymusses in their robenhauses
 quailed to hear his tardeynois at all for you cannot wake a
 silken nouse out of a hoarse oar" (154.07-.10), is directly
 contrary to alchemy and to Zosimos, who states that the stone
 is "contemned and much esteemed, not given yet given by God",²²⁵
 that is, the stone is to be found in the lowliest matter, such
 as dung, yet paradoxically it is at the same time the most
 precious phenomenon in nature. At the basis of this central
 alchemical doctrine is a belief in the unification of opposites,
 in the form of the positive sulphur-negative mercury principles,
 which were the basis of chemistry until the phlogiston theories
 of the eighteenth century.²²⁶ Zosimos amplifies, claiming that
 "there are two natures and one substance, one nature attracts
 the other, and one conquers the other, and that is mercury,
 the male-female, ever-elusive divine water, which not all know
 and whose nature is difficult to see."²²⁷ Joyce's use of Zosimos
 makes it likely that Shem is to be identified with mercury,
 Shaun with sulphur. The coniunctio oppositorum in Zosimos is
 both a palingenesis,²²⁸ the perfection of life out of ash, a
 principle expanded by Paracelsus and corresponding closely to
 Joyce's phoenix, and a resurrection into perfection.²²⁹

In a fourth mention of Zosimos by name, Joyce appears to have the Visions directly in mind; Shem has several times refused to submit to transformation via the four elements, but here he is willing, although an interruption occurs:

Cokerycokes, it's his spurt of coal. And may his tarpitch dilute not give him chromitis! For the mauwe that blinks you blank is mostly Carbo. Where the inflammabilis might pursue his comburenda with a pure flame and a flame all toogasser, soot. The worst is over. Wait! And the dubuny Mag may gang to preeses. With Dinny Finneen, me canty, ho! In the lost of the gleamens. Sousymost. For he would himself deal a treatment as might be trusted in anticipation of his inculmination unto fructification for the major operation. (232.01-.09)

The "major operation" is the alchemical opus; Zosimos' description of this physical-psychological transformation forms the body of the work, the Visions, a frame narrative, significantly, for Joyce, in the form of dream sequences.

On falling asleep, Zosimos sees the sacrificial priest, Ion, standing above him on a bowlshaped altar with fifteen steps leading up, which Ion claims to have descended into the darkness and to have ascended again, thereby casting away corporeal grossness and living in spirit (in Question One, Finn MacCool or HCE is the "god at the top of the staircase, carrion on the mat of straw", 131.17). Ion further states that it is necessary to submit to punishment, to quartering by sword, to skinning and chopping, and to burning in the fire of the Art, until metamorphosis occurs. Zosimos presses him for more information,

but Ion's eyes have become bloody (Shem has "hemoptysia diadumenos" (174.19), or bloody eyes, like his maker), he vomits his own flesh, and he changes into a mutilated anthroparion,²³⁰ rending his own flesh. Here Zosimos wakes and meditates on the discovery of the composition of the divine waters (or the initial chaos or mortificatio). On sleeping again, he sees boiling water in the bowl-altar, and a crowd about it; the anthroparion is now a barber, grown grey, who reveals the bowl as the entrance, transformation, and exit into spirit. A brazen man with a leaden tablet appears, commanding the initiates to be calm and to write upon the tablet. Zosimos tries to ascend, but becoming confused and lost, he wakes within the dream to find the anthroparion clad in a robe of royal purple and follows him to the fire, wherein the homunculus is being consumed. Zosimos encounters Agaithodaimon, the aged white man, eyes bloody, burning in the fire, who reveals himself as the leaden man. Zosimos looks about and sees many initiates, burning and boiling into spirit. Finally, he learns that the brazen man became the silver man, who becomes the golden man, the apotheosis of the Work.

Joyce's references to carbon and fire in the Wake quotation above, in the light of Zosimos' insistence upon torture, are alchemical. The burning is a test: "the genuineness or incorruptibility of the stone is proved by the

torment of fire and cannot be attained without it"²³¹; Zosimos notes²³² that the quickening by fire is a process parallel to the whitening or albedo, the penultimate stage of the Work, which appears after the nigredo or initial chaos. Shem is carbon; Shaun is fire. Shem's submission is an agreement to Shaun's superiority and maturation. Nevertheless, the process is incomplete, for god and carrion must unite in HCE, the Red Man, the rubedo, the Rising Sun.

Zosimos appears in Part IV, the manifestation of
Pu Nuseht:

We annew. Our shades of minglings mingle them and help help horizons. A flasch and, rasch, it shall come to pasch, as hearth by hearth leaps live. For the tenderest stock with the rosinost top Ahlen Hill's, clubpubber, in general stores and. Atriathroughwards, Lugh the Brathwacker will be the listened after and he larruping sparks out of his teiney ones. The spearspid of dawnfire totouches ain the tablestoane ath the centre of the great circle of the macroliths of Helusbelus in the boshiman brush on this our penepplain by Fangaluvu Bight whence the horned cairns erge, stanserstanded, to floran frohn, idols of isthmians. (594.15-.25)

The term "rosinost", I believe, is Rosinus, another name for Zosimos, who lived at Panopolis ("penepplain"), like "Helusbelus", or Heliopolis, in ancient Egypt; the reference to Stonehenge further establishes the antiquity of the passage, and reminds us of Zosimos' temple built of one white stone.²³³

The summation of Zosimos' transformational system is the resurrection of the Anthropos, the Son of God, the Gnostic

Christ;²³⁴ he calls the stone a 'Mithraic' mystery.²³⁵ The process has four colors, black, white, yellow, and red, ending in the color of the sun and of gold.²³⁶ The apotheosis of HCE in "horned cairns erge" is the awakening of a Trinity; Zosimos says "Our stone hath its name in common with the Creator, for it is triune and one".²³⁷

Finally, Zosimos' name is present during the Four Elders' voyeuristic view of the marriage consummation of HCE and ALP: "Squintina plies favours on us from her rushfrail and Zosimos, the crowder, in his surcoat, sues us with souftwister" (567.29-.30). The sexual wedding is a central alchemical symbol, signifying the final stages of unification. Zosimos likened alchemy to sexual generation²³⁸; mercury, as a particular instance, is hermaphroditic²³⁹, and Zosimos employed a virginal, breast-shaped vessel.²⁴⁰ His metaphors become more generally organic, so that the water in the bowl-shaped altar of the cosmos unfolds like a tree, bearing flowers and fruit²⁴¹, sublimation is "the rising of the flowers"²⁴², and the Opus is like the sowing and flowering of a grain of wheat.²⁴³

Among other features of Zosimos' life and work which may have attracted Joyce's attention are a compilation of an alchemic encyclopedia, the Cheirokmeta²⁴⁴, in the form of letters to his sister Theosebia; the distillation of eggs;²⁴⁵

the tinting of metals to resemble gold²⁴⁶, certainly relevant to the 'forge' concept; the soul in matter as virginal; and the pearl as perfection,²⁴⁷ which is perhaps echoed in:

Has your pussy a pessname? Yes, indeed, you will hear it passim in all the noveletta and she is named Buttercup. Her bare name will tellt it, a monitress. How very sweet of her and what an excessively lovecharming missynname to forsake, now that I come to drink of it filtred, a gracecup fullled of bitterness. She is dadad's lottiest daughterpearl and brooder's cissiest auntybride. (561.10-.16)

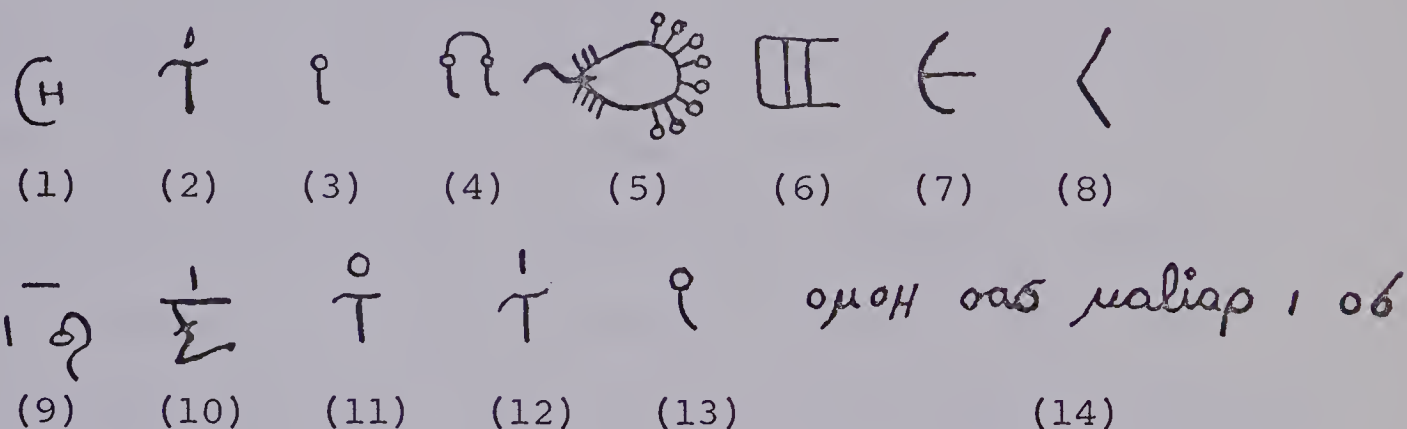
There might seem to be little reason to trace the pearl image to Zosimos, except that Joyce mutates "sousymusses" to a nickname for Izod:

I call her Sosy because she's sosiety for me and she says sossy while I say sassy . . . (459.11-.12)

Zosimos mentions the wheel metaphor²⁴⁸, and the motif of the unfledged versus the fledged: "If two do not become one, that is, if the fledged does not conquer the unfledged, your expectation will come to nothing",²⁴⁹ his meaning is the victory by the volatile over the fixed, of spirit over matter, but the echoes with Joyce's "Lead, kindly fowl" (112.09) are there. The final stage of the opus in Zosimos is called the solificatio, in which the son dons a new garment, always of royal purple; Joyce's sartorial images and puns are rampant.

Even more important than all the foregoing in an understanding of alchemy in Finnegans Wake, however, is the

undeciphered Formula of the Crab,²⁵⁰ attributed to Zosimos, and purported to supply the secret of transmutation; "it is of particular interest as a precursor of alchemical symbolism"²⁵¹ and "conveys, to the initiated, a method of colouring base metals, by the use of copper compounds, so as to make them resemble gold".²⁵² The original formula is:



The following partial translation has been suggested:²⁵³

(1) message begins; (2) the All, universal matter (an alloy of lead and copper; Maria the Jewess' prima materia); (3) verdigris (rust of copper); (5) the crab as symbol of fixation; (10) the philosopher's egg; (14) blessed is he who receives understanding.

Turning to Shem's "first riddle of the universe" (page 170), we discover surprisingly that the coincidence with Zosimos' Crab Formula is complete. Shem's prize for finding the solution is "a bittersweet crab, a little present from the past, for their copper age was as yet unminted" (170.07-.09); the crab is Zosimos' crab and the copper age is the copper of the formula in (2) and (3). There are fourteen symbols and fourteen answers; the first thirteen guesses are incorrect,

and Shem's, the fourteenth, is the correct one: a man is not a man when he is a "sham" (170.24), corresponding to symbol (14), "blessed is he who receives understanding". Even the incorrect answers are congruent. Symbol (2), the All or universal matter is in alchemy the Mother, the prima materia; answer (2) is "when Bohemeand lips" (170.10), and 'lips' is a central cognate for ALP, as in one of her final utterances, "Lps" (628.15). Answer (3) is "when he is a gnawstick and detarmined to" (170.11-.12); Zosimos was a gnostic. Answer (10), corresponding to the philosopher's egg, is "when wee deader walkner" (170.18), that is, when "Hung Chung Egglyfella" (374.34) resurrects through the potency of the Art, and through the alchemy of the word, represented here by Joyce's master, Ibsen.

Joyce links alchemy and language, specifically, riddles, wit, and humor. Shem is the alchemist, and only he can decipher the puzzles of language and of the cosmos. A man is not a man when he is but one of the consonantal pair (m,n): Shem is "m"; Shaun is "n" ("the twins that tick Homo Vulgaris", 418.26). "M"-man is a sham or fake, but also the shaman, the druid-magus; Shem assumes this role almost apparently in the Patrick-Berkeley showdown.

In Zosimos, language and music are one in the eyes of the seer:

From the most general musical lines ABCD twenty-four different lines arise . . . and only with these twenty-four lines can the numberless melodies of hymns be composed . . . including those concerning the sacred knowledge, for instance concerning the solution and dissolution . . . Herein is found that which has power over the one true material for the genesis of the bird.²⁵⁴

The word 'bird' here means the lapis philosophorum; the twenty-four lines are the active principle of matter, in agreement with Gnostic speculation on the Stoicheia, which were interpreted as aeons and emanations of light²⁵⁵; in alchemy, the stars were viewed as twenty-four letters of a heavenly golden alphabet, the 'heavenly crown' uniting all, as Mennens says, and the heavens are parchment, the stars an inscription.²⁵⁶ Joyce's usage is vaguely comparable; the "stellas" are also an alphabet of sorts, containing for some reason, thirty letters (247-248). The Wake is no doubt musical. There are four things "saith our herodotary Mammon Lujus in his grand old historium . . . ne'er sall fail til heathersmoke and cloudweed Eire's ile sall pall" (13.20-.23), namely, the father, the mother, the daughter, and the fraternal twins. One has to stretch to trace this usage to Zosimos, however, for other numbers are employed by Joyce as abstract archetype for the Family, notably three-two and five. However, there can be little doubt that Joyce knew Zosimos; the following indicates his knowledge of Stoichea, whatever the source, be it Mennens,

Zosimos, or the Qabbalah: "A hand from the cloud emerges, holding a chart expanded" (593.19). This double manifestation of HCE is extremely similar to Zosimos' teaching that the demiurge created two triads, for which reason he is called Hermes Trismegistos; the upper triad is indivisible, a monad, active, creative, and the cause of the stone's life, while the lower triad is cosmic, divisible, material, consisting of ore, lead, and the Etesian stone.²⁵⁷

FOOTNOTES: INTRODUCTION

1

All numbered references are to page and line number in Finnegans Wake.

2

Wilde, De Profundis, 64.

3

Von Franz, Aurora consurgens, 242.

4

Jung, Alchemical Studies, 170.

5

Ripley, Opera Omnia Chemica [Kassel, 1649], 130; quoted in Jung, Psychology and Alchemy, 311.

6

Turba philosophorum; quoted in Aurora consurgens, 161n29.

7

Aurora consurgens, 161.

8

Honorius of Autun, Speculum Ecclesiae, in Jacques Paul Migne, Patrologiae cursus completus [Paris, 1844-64], Vol. 172, col. 1062; quoted in Aurora consurgens, 161n33.

9

Alchemical Studies, 99.

10

"In Turbam philosophorum exercitationes", Artis Auriferæ quam chemiam vocant [Basel, 1593, 2 Vols.], I, 170; quoted in Alchemical Studies, 236n12.

11

Zosimos; quoted in Aurora consurgens, 278.

12

Read, Prelude to Chemistry, 101.

13

Ibid., 84.

14

Alchemical Studies, 72.

15

See for example Alchemical Studies, 83n76.

16

Alchemical Studies, 73.

17

Jung, Psychology and Alchemy, 225.

18

Read, Prelude to Chemistry, 150.

19

Alchemical Studies, 75.

- 20
 Aurora consurgens, 350.
- 21
 Psychology and Alchemy, 329.
- 22
 Aurora consurgens, 345.
- 23
 Ibid., 293-294.
- 24
 Prelude to Chemistry, 148.
- 25
 This is certain; see Jung, Read, Taylor, et al.
- 26
 Aurora consurgens, 173.
- 27
 Multhauf, The Origins of Chemistry, 207.
- 28
 Ibid., 286.
- 29
 Aurora consurgens, 10.
- 30
 The Origins of Chemistry, 110.
- 31
 Prelude to Chemistry, 46.
- 32
 The Origins of Chemistry, 199.

FOOTNOTES: THE ALCHEMISTS AT THE WAKE

1

Alchemical Studies, 213

2

Reproduced in Prelude to Chemistry, Plate 7, and in Psychology and Alchemy, Figures 10, 11, 12, 46, 47, 160, 217.

3

Uraltres chymisches Werk, 29ff; quoted in Alchemical Studies, 213.

4

Ibid., 34; in Alchemical Studies, 213.

5

Atherton, The Books at the Wake, 287.

6

Lacroix, Science et Lettres; quoted in Prelude to Chemistry, 30.

7

See Partington, A History of Chemistry, II, 46, and Prelude to Chemistry, 79.

8

See Hind, The History of Woodcut, I, 35-36.

9

A History of Chemistry, II, 42-62.

10

Pachter, Paracelsus: Magic, 88.

11

Ibid., 61.

12

Alchemical Studies, 130.

13

Stoddart, Paracelsus, 240. This Paracelsan biographer is possibly included in "stoddard" (584.01), an adjective applied to HCE in the bedroom.

14

Ibid., 241-242.

15

The first two of these are mentioned in The Books at the Wake.

16

Franz Strunz, Paracelsus, Idee und Problem seiner Weltanschauung (Salzburg-Leipzig: A. Pustet, 1937), 29; quoted in Paracelsus: Magic, 52.

17

Agrippa, De occulta philosophia, I, xxxiv; cited in

Alchemical Studies, 155n108.

18

See Paracelsus and Paracelsus: Magic for instance.

19

Alchemical Studies, 135.

20

Prelude to Chemistry, 189-190.

21

Paracelsus: Magic, 252.

22

De occulta philosophia, lxviii; cited in Alchemical Studies, 114.

23

Quoted in Alchemical Studies, 114.

24

Agrippa, De incertitudine, Chap. XC; in Psychology and Alchemy, 301n50.

25

De occulta philosophia, lxviii; quoted in Alchemical Studies, 114.

26

Ibid., 1f; quoted in A History of Chemistry, II, 134.

27

Alchemical Studies, 155.

28

Ibid., 155n105.

29

Ibid.

30

Paracelsus: Magic, 61.

31

See Paracelsus, Von der Bergsucht und anderen Bergkrankheiten [1567], in Sigerist, Four Treatises of Theophrastus, 43-126.

32

Alchemical Studies, 181n16.

33

Ibid., 181.

34

Aquinas, Summa Theologica (Dominican Trans.), II-II, q.96, art. 2, obj. 1, Vol. 11, 216. "Res autem naturales habent quasdam virtutes occultas, quarum ratio ab homine assignari non potest"; Summa Theologica (ed. Pecei), Vol. 3, 472.

35

Aquinas, Expositio in quatuor libros meteorologicorum Aristotelis, III, 9; quoted in Aurora consurgens, 418; "alchimistae per verum artem alchimiae (sed tamen difficilem, propter

occultas operationes virtutis caelestis . . ."

36

Aquinas, Scriptum in quatuor libros sententiarum magistri Petri Lombardi, II, 7.3.1 ad 5; quoted in Aurora consurgens, 418. "Alchymistae faciunt aliquid simile auro quantum ad accidentia exteriora, sed tamen non faciunt verum aurum, quia forma substantialis auri non est per calorem ignis, quo utuntur alchimistae, sed per calorem solis in loco determinato, ubi viget virtus mineralis; et ideo tale aurum non habet operationem consequentem speciem, et similiter in aliis, quae eorum operatione fiunt."

37

Published by Lucas Jennis, Frankfurt, 1617.

38

Prelude to Chemistry, 222.

39

Reproduced in Prelude to Chemistry, Plate 3.

40

Alchemical Studies, 123.

41

Aurora consurgens, 409.

42

Ibid., 408.

43

Taylor, The Alchemists, 197.

44

Paracelsus, Astronomia magna, ed. Sudhoff, XII, 36 and 304; quoted in Alchemical Studies, 115.

45

Barbarus (1454-1493), for instance, in his Corollarium in Dioscoridem, cited in Maier, Symbola aureae mensae duodecimum nationum [Frankfurt, 1617], 174; quoted in Alchemical Studies, 76.

46

Psychology and Alchemy, 119-120.

47

"Aquarium sapientum", Musaeum Hermeticum [Frankfurt, 1678], 118; in Alchemical Studies, 292.

48

See Prelude to Chemistry, 27, and Paracelsus: Magic, 337-338.

49

Aurora consurgens, 306.

50

Ibid., 307n.

51

Ibid., 383.

52

Greverus, quoted in Alchemical Studies, 277.

53

Henricus Khunrath, Von hyleaslichen chaos [Magdeburg, 1597], 270; in Alchemical Studies, 308.

54

Alchemical Studies, 309.

55

The Books at the Wake, 234.

56

The major structural role played by the sacred Hindu mantra is discussed at length in Hart, Structure and Motif, 96-104.

57

Joyce, Ulysses, 186.

58

The Origins of Chemistry, 201.

59

Ibid., 179.

60

The role of the Koran is admirably discussed in Atherton, The Books at the Wake, 201-217.

61

The Alchemists, 83 and 91.

62

The Origins of Chemistry, 120.

63

Holmyard, Makers of Chemistry, 84.

64

Farber, Great Chemists, 16.

65

Structure and Motif, 104-108.

66

Jabir, The Works of Geber, ix.

67

The word "barmicidal" also includes poems by Mangan and Williams; see The Books at the Wake, 266 and 289.

68

Great Chemists, 19.

69

Prelude to Chemistry, 19.

70

J.W.Fück, transl., "The Arabic Literature on Alchemy According to Al-Nadim", Ambix, IV (1951), 95-96; cited in Great Chemists, 16n5.

71

Karl Garbers, ed. and trans., "Kitab fi kimiya al-itr wat-tasidat, Buch uber die chemie der perfums und die destillationen von Yaqub B. Ishaq Al-Kindli" (Leipzig: Brockhaus, 1948), 11; cited in Great Chemists, 23.

72

Ibid.; cited in Great Chemists, 23-24.

73

The Books at the Wake, 210.

74

Ibid., 209.

75

Ibid.

76

The Origins of Chemistry, 121.

77

T.J.Boer, Encyclopedia of Islam, (Leyden: 1913), 419; cited in Great Chemists, 31.

78

Holmyard and Mandeville, Avicennae, De Congelatione, 40.

79

A History of Chemistry, II, 190-194.

80

Prelude to Chemistry, 187.

81

Eliot, "The Wasteland", I ("The Burial of the Dead"), line 76, in The Complete Poems and Plays, 39.

82

Baudelaire, "Au Lecteur", in The Flowers of Evil, 4, lines 37-40.

83

Ibid., 2, lines 9-12.

84

Notably Boldereff, Hermes to his Son Thoth, Benstock, Joyce Again's Wake, and Atherton, The Books at the Wake.

85

A History of Chemistry, II, 381.

86

McIntyre, Giordano Bruno (London: 1903), 128 and 149f; cited in A History of Chemistry, II, 14.

87

Cardan, De subtilitate [lib. xviii-xix, 8^o Basel: 1560], viii, 493; cited in A History of Chemistry, II, 382.

88

Berthelot, Collection des Anciens Alchimistes grecs, IV, xx, 8; quoted in Alchemical Studies, 154.

- 89
Prelude to Chemistry, 201.
- 90
The Alchemists, Figure 9.
- 91
 Ibid., 51.
- 92
 E. Ebeling, "Parfümrezepte und Kultische Texte aus Assur" (Rome: Pontifical Institute, 1950), 32; cited in Great Chemists, 3.
- 93
The Books at the Wake, 245.
- 94
 Petersson, Sir Kenhelm Digby, 96-100.
- 95
 John Evelyn, Diary, 268 (Nov. 7, 1651).
- 96
 Galen, Opera Omnia [1550], (Edited D.C.G.Kuehn. Leipzig: Cnobloch, 1821-1833), I, 603; quoted in Siegel, Galen's System, 352.
- 97
 Ibid.
- 98
Galen's System, 354.
- 99
 Ibid., 250.
- 100
 Ibid., 357.
- 101
 Ibid., 250.
- 102
 Ibid., 354.
- 103
 Ibid., 219.
- 104
 Galen, Opera Omnia, III, 495; quoted in Galen's System, 52.
- 105
 Joyce, Ulysses, 391.
- 106
 See, for example, Tindall, A Reader's Guide to Finnegans Wake, 295.
- 107
Galen's System, 136.
- 108
Paracelsus: Magic, 3.

- 109
Ibid.
- 110
Ibid., 38.
- 111
Ibid., 56.
- 112
Stoddart, Paracelsus, 132.
- 113
Paracelsus: Magic, 36.
- 114
Bruno, De triplici minimo (libri V, sm. 8^o; Frankfurt, 1591); cited in A History of Chemistry, II, 382-383.
- 115
Sarton, Galen of Pergamon, 9-10.
- 116
Ibid., 13.
- 117
Blavatsky, Key to Theosophy, 2.
- 118
Zaehner, trans., The Bhagavad Gītā, VIII, 18, p.73 and 266.
- 119
Martial, Epigrammata, V, 24; quoted in Alchemical Studies, 221.
- 120
Cited in Psychology and Alchemy, 330.
- 121
"Rosarium Philosophorum" [Frankfurt, 1550], 2, xii, 239; quoted in Psychology and Alchemy, 76.
- 122
Ibid., 239; quoted in Psychology and Alchemy, 160n104.
- 123
Ibid., 236; quoted in Psychology and Alchemy, 170.
- 124
Prelude to Chemistry, 52.
- 125
Ibid.
- 126
Psychology and Alchemy, 438. 'Mercurius' is Jung's all-inclusive term for the amalgam of Hermes, Thoth, Mercury, and the alchemical Spirit.
- 127
Romanus Morienus, "De transmutatione metallorum", Artis Auriferæ [Basel: 1593, 2 Vols.], II, 25f; quoted in Alchemical Studies, 314.
- 128
Prelude to Chemistry, 161.

129

Ibid., 5.

130

Ibid., 54.

131

Ibid.

132

Ibid., 55.

133

Ibid., 15.

134

Ibid., 15-16.

135

The Alchemists, 90.

136

Although of course for Milton they also serve who stand and wait.

137

Alchemical Studies, 212.

138

Psychology and Alchemy, 288n24.

139

Letter to Harriet Shaw Weaver, August 14, 1927; Letters, I, 286.

140

Glasheen, A Second Census, 115.

141

Psychology and Alchemy, 127.

142

Following are notes to this important passage, referred to in letters:

a

'b' becomes 'p' when the masculine dies, when Shaun flees; 'apsis'=circumference; the orbit of a planet.

b

Latin 'fuga'=flight: Shaun delivers the letter shortly; overtones of 'Frigga's day', or Friday ("good friday", 433.12), the day upon which Shaun-Christ disappears into hell, the miniature version of the Ascension-Christmas disappearance which forms the major context of this passage.

c

red, generally; red print, especially a saint's day or the words of Jesus; red is the liturgical color from Easter to Pentecost.

d

L. 'mandare'=command, authority; 'mandamus' in English is a court's command; Mandarin=orange.

e

pasch; this should also be yellow, but the only connection is "By the unsleeping Solman Annadromus, ye god of little pescies" (451.10-.11).

f

green, particularly, the liturgical color from Pentecost to Advent.

g

blue, or black and blue.

h

indigo.

i

violet; the color of Lent. Shaun thinks he is talking of the Church calendar, but because Shem has written the words, there is a reference to rainbow, peace, and sexuality, hidden in the "virginwhite" of 433.03.

j

the liturgy is leaden; lead is the end of a cycle, like red to violet, although in alchemy lead is the beginning, the lowest common point.

k

by Immanuel Kant or Annie Besant, i.e., by logic or mysticism.

l

feast; Christmas, Shaun's rebirth.

m

Whitsunday, or Pentecost, from the custom of the white robes of baptismal initiates on Pentecost; thus Isabel "wares in heaven, virginwhite", from thirty days after Easter onwards; Shem as Holy Spirit reigns from Pentecost, when he descends (with the gift of tongues), fifty days after Easter: Ascension is forty days after. "sindays" are the days of Shaun, but also Shem's sin.

n

Shem, like Milton's Satan, serving God.

o

Shaun says he made the preceding "grapce" pun and the reference to the Mokse/Gripos dialogue in the interests of brevity; not much of a joke, but it provides the identification; he "axes" Shem like XYZ.

p

Hobson's coice.

q

Turkish "chaush"=messenger; see main text.

r

for Shem, the saints are solid sewage strained, and Shaun's hope is excrement; Shaun thinks of them as food. An

alchemical metaphor as well, separation of the useful from the useless.

s

non-changing and changing portions of the Mass; see also main text.

t

Ignatius Loyola, founder of the Jesuits; maroon is the Order's color; it was originally incorporated to combat the Turks (see "chouse").

u

Francis Xavier, first Jesuit secretary, who died in Macoa trying to enter China; "Ultramare"=across the sea.

v

July 31, St. "ignitious" feast-day.

w

December 3, St. Francis Xavier's feast-day. Shem reigns during roughly this period.

x

"Ad majorem dei gloria" (?); when Shem reigns, terror on earth, the reign of Ham (gammons).

y

Isobel is white on the surface.

z

L. "unde"=whence; "trigesima"=thirtieth (day after Easter).

aa

sex is present in "vikissy" and "manonna" (man plus madonna), in the seven colors that make white (432.30-.31).

bb

diocese; eating reinforced by "Manducare".

cc

L. "manducare"=to chew.

dd

farrier as horseman, but the central meaning is 'feria', the weekdays, i.e., monday through friday, the day when the week sleeps.

ee

reinforces Xavier in Macao.

ff

parody of Mass Latin.

gg

technical catechism for the Church on Earth, forming one part of Christ's Mystical Body (Triumphant in Heaven, Suffering in Purgatory).

hh

Shem has written the speech, hence the double meanings; like the Holy Spirit on Pentecost, he inspires with tongues.

143

As Atherton, The Books at the Wake, 259, notes, Jonson occurs frequently in the Wake; he lists "benjamin" (38.02), "joyntstone" (192.35), "volponism" (97.14), all of which seem to be equivocal, and "Moscas" (84.01), which is certain.

144

Jonson, The Alchemist, I, ii, lines 25-26.

145

Skeat, Etymological Dictionary, 108.

146

The Alchemist, I, i, lines 176-179.

147

For example, in Question Four (140-141), "What Irish capitol city (a dea o dea!) of two syllables and six letters, with a deltic origin"

148

The Alchemist, II, vi, lines 19-24.

149

Ibid., IV, iii, 74-75.

150

Ibid., I, i, 64-72.

151

Ibid., IV, ii, 13-14.

152

Ibid., I, i, 182-187.

153

Ibid., I, i, 58.

154

Ibid., IV, vii, 112.

155

Ibid., II, ii, 239-241.

156

Ibid., IV, v, 18-32.

157

Ibid., I, i, 100-102.

158

Ibid., II, iii, 99-101.

159

Ibid., III, iv, 107-108.

160

Burton, The Anatomy of Melancholy, Part I, Section 2, Member 2, Subsection I, 191.

161

Joyce, Ulysses, 172.

162

The Alchemist, II, vi, 65-69.

163

Ibid., III, iv, 38-39.

164

Peers, Ramon Lull, 410.

165

Ibid., 406.

166

Johann Daniel Mylius, Philosophia reformatata [Frankfurt, 1622], 302; quoted in Alchemical Studies, 227.

167

Lull, "Codicillus", in Johannes Jacobus Mangetus, Bibliotheca chemica curiosa [Geneva, 1702, 2 Vols.], I, 880f; quoted in Alchemical Studies, 235n5.

168

Quoted in Psychology and Alchemy, 246.

169

Lull, "Codicillus", Bibliotheca chemica curiosa, I, 884; quoted in Psychology and Alchemy, 344.

170

Taylor, The Alchemists, 111-112.

171

Hopkins, Alchemy, Child of Greek Philosophy, 193.

172

Primarily in Dispute between Ramon and the Hermit; see Peers, Ramon Lull, 407.

173

The Origins of Chemistry, 181. See also my discussion of Jonson herein.

174

Lull, Felix, or the Book of Marvels, Book VII ("The Book of the Beast"); see Ramon Lull, 209.

175

The Origins of Chemistry, 103.

176

Prelude to Chemistry, 15.

177

Basilus Valentinus, Last Will and Testament; quoted in Prelude to Chemistry, 195.

178

Socrates in Turba philosophorum, 197; quoted in Alchemical Studies, 77.

179

Aquinas, Aurora consurgens, II; quoted in Alchemical Studies, 85.

180

"Consilium coniugii", Ars chemica, 253; quoted in Alchemical Studies, 94.

181

"The Treatise of Komarios", in Berthelot, Alch. grecs, IV, xx, 8; cited in Alchemical Studies, 78.

182

Cited in Psychology and Alchemy, 22-23.

183

Psychology and Alchemy, 26.

184

Prelude to Chemistry, 307nl4.

185

Catalogue of the Newton Papers Sold by Order of the Viscount Lymington to whom they have descended from Catherine Conduitt, Viscountess Lymington, Great-Niece of Sir Isaac Newton. (London: Sotheby and Co., 1936). Cited in Prelude to Chemistry, 307nl4.

186

Ibid., Forward; quoted in Prelude to Chemistry, 307nl4.

187

Stillman, Theophrastus Bombastus, 29-30.

188

A History of Chemistry, II, 129.

189

Ibid., II, 130, and Paracelsus: Magic, 215.

190

A History of Chemistry, II, 130.

191

Paracelsus, "Paragranum", Op.fol., I, 219; quoted in Theophrastus Bombastus, 37.

192

Ibid., iii; cited in A History of Chemistry, II, 136.

193

Paracelsus, Labyrinthus medicorum, Chap. V; cited in A History of Chemistry, II, 137.

194

A History of Chemistry, II, 142; he lists as authorities Stillman, Theophrastus Bombastus, 91 and 106, and J.C.Gregory, Combustion from Heraclitos to Lavoisier (1934), 58.

195

A History of Chemistry, II, 143.

196

After Paracelsus: Magic, 337-338.

197

Ibid., 338.

198

Ibid., 339.

199

See Oporinus' letter of November 26, 1555, printed in

Opera [1666], i, 188; cited in A History of Chemistry, II, 120.
200

See Ellmann, James Joyce, 411.

201

Waite, Lives of the Alchemystical Philosophers (1888),
138; quoted in A History of Chemistry, II, 118-119.

202

The Books at the Wake, 46.

203

See A Second Census, 211, and The Books at the Wake,
272-273.

204

Zosimos, in Berthelot, Alch. grecs, III, xlix, 4;
quoted in Psychology and Alchemy, 347.

205

Petrus Bonus, "Margarita pretiosa novella correctissima",
in Bibliotheca chemica curiosa, II, 30; cited in Alchemical
Studies, 298.

206

Prelude to Chemistry, 111.

207

Ibid., 108.

208

A History of Chemistry, II, 16.

209

Giambattista Della Porta, Magia naturalis, V.

210

Porta's theory of signatures; see A History of Chemistry,
II, 131.

211

A History of Chemistry, II, 131.

212

See, for example, Kain, Dublin: In the Age of Yeats
and Joyce, 33-35.

213

The Books at the Wake lists fourteen references to
Yeats, all of which are firm; he overlooks The Celtic Twilight.

214

Joyce, Ulysses, 184.

215

Ibid., 185-186.

216

Yeats, The Celtic Twilight, 75-76.

217

Ibid., 87-88.

218

Ibid., 110-111.

219

The Origins of Chemistry, 85.

220

Ibid., 116.

221

The Books at the Wake, 290, mentions only the first four of these; the fifth is hidden, and the omission can be overlooked, but the sixth is the only correct spelling of 'Zosimos' in the Wake, a surprising oversight on Atherton's part.

222

The Origins of Chemistry, 104.

223

"The Treatise of Zosimos the Divine concerning the Art", in Berthelot, Collection des Anciens Alchimistes grecs.

224

Alchemical Studies, 71.

225

Alch. grecs, III, ii, 1; quoted in Aurora consurgens, 161.

226

Prelude to Chemistry, 33.

227

Alch. grecs, III, ix, 1; quoted in Alchemical Studies, 278.

228

Alch. grecs, III, xxxiv; cited in Aurora consurgens, 369

229

Ibid., III, lvi, 3; cited in Aurora consurgens, 369.

230

Alchemical Studies, 6ln7, notes that this is the first mention of the homunculus in literature. Joyce is not one to miss such a venerable creature: "He missed her mouth and stood into Dee, Romunculus Remus, plying the rape, so as now any bompriss's bound to get up her if he pool her leg and bunk on her butt" (525.33-.35). He sees the homunculus as the union of the warring opposites, more interested in sex.

231

Alchemical Studies, 72.

232

Alch. grecs, III, xl, 2; cited in Aurora consurgens, 290.

233

Aurora consurgens, 16.

234

Psychology and Alchemy, 354-355.

- 235
Alch. greco, III, ii, 1; cited in Aurora consurgens,
320.
- 236
The Origins of Chemistry, 104.
- 237
Artis Auriferae [Basel, 1593], I, 192; quoted in
Aurora consurgens, 278.
- 238
The Origins of Chemistry, 102.
- 239
Alch. greco, III, ix, 1; cited in Aurora consurgens,
259n85.
- 240
Aurora consurgens, 333n99.
- 241
Alch. greco, IV, i; cited in Aurora consurgens, 163n36.
- 242
Ibid., III, ii, 3; cited in Aurora consurgens, 392n159.
- 243
Ibid., II, iv, 32; cited in Aurora consurgens, 400.
- 244
See The Origins of Chemistry, 102.
- 245
The Alchemists, 82.
- 246
Prelude to Chemistry, 14.
- 247
Alch. greco, III, ii, 2; cited in Aurora consurgens,
243n121.
- 248
Ibid., III, xliii, 16; cited in Aurora consurgens, 346.
- 249
Ibid., III, xxviii; quoted in Aurora consurgens, 365n15.
- 250
Quoted in Prelude to Chemistry, 41.
- 251
Ibid., 40.
- 252
Ibid., 154.
- 253
Ibid., 40-41.
- 254
Alch. greco, III, xliv, 1; quoted in Aurora consurgens,
330.
- 255
Aurora consurgens, 330.

256

Mennens, quoted in Aurora consurgens, 330n84.

257

Alch. grecs, III, vi, 18; cited in Aurora consurgens,
278n8.

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